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ABSTRACT

The summary report focuses on postsecondary education for the health professions in the context of evolving health care systems within Organizations for Economic Cooperation and Development (OECD) member countries. An assessment of health care practices in these countries led to the conclusions and recommendations presented in part one of the report. There are trends toward: (1) individualized community level health care and prevention (primary health care), (2) greater cost-effectiveness, and (3) educational reorganization. Recommendations deal with the need for national health policies, integration of health care and education, coordinated government action, research, continuing and recurrent education, and international efforts. The second section reviews present trends: the size, growth rates, and complexity of health care and education of the health professions in member countries. New demands on health care systems by consumers, professionals, and government officials for improved access, quality, cost control, and extension are outlined. Response to these demands is reported as new health care policies, (especially primary care) and policy implementing mechanisms. The educational responses to trends in health care systems are detailed with the conclusion that innovative approaches are more abundant than actions being taken on them. The report concludes with a five-page bibliography. (Author/MS)

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NEW DIRECTIONS IN EDUCATION FOR CHANGING HEALTH CARE SYSTEMS

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NEW DIRECTIONS IN EDUCATION FOR CHANGING HEALTH CARE SYSTEMS

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
1975

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PREFACE

Just as with so many facets of modern society, health care poses major developmental problems. Access to complete health care has come to be regarded as a right, and the last 20 years have seen an explosive growth in national systems of health care. At the present time they constitute major elements in our society, involving 4 to 6 per cent of the labour force and from 4 to 8 per cent of annual expenditure in most OECD Member countries.

Behind these signs of size and growth lie many riddles. Health care has achieved remarkable advances in terms of falling infant death rates, new treatments, and surgical wonders — yet there remain large pockets of society without adequate access to health care, and there is growing dissatisfaction with health care in its individual and human aspects. A lengthening life span and the complexities of modern society have created the need for new approaches to escalating socio-medical conditions such as aging, chronic illness, mental illness, drug abuse, and alcoholism. To sustain the excellence of the present while grappling with these new problems, and to do so within reasonable limits of human and financial resources, is the challenge now facing the health professions.

New answers to new problems in whatever field inevitably call for personnel with different kinds of knowledge and skill. It was with this fact in mind that CERI in 1972 undertook a study of education of the health professions in the context of evolving health care systems, with the financial support of the Josiah Macy, Jr. Foundation.

The study was directed by a Group of Experts appointed by the Secretary-General of the OECD, Mr. Emile van Lennep. From the first, the Group addressed itself to certain basic questions : where are health care systems going, and why ? Do these directions put new calls on our patterns for educating the health professions and occupations ? Are there models of innovation that deserve to be followed up at national or international level ?

The far-ranging results of the Group's study may be found in this summary report. Future health care, in the Group's view, will have a much stronger orientation to individualised, community-based primary health care. This re-orientation will require professional personnel with new understanding and skills in social, psychological and management areas. The effectiveness of the re-orientation, and the speed with which it will come, hinge on new partnerships between education and health care — partnerships forged at the regional level and fostered by national and international policy clarification.

On behalf of CERI and the OECD, I wish to thank the members of the Group of Experts, the many consultants and experts who aided their study, and the Josiah Macy, Jr. Foundation, for their help in bringing forth a timely and significant report.

J.R. GASS
Director
Centre for Educational
Research and Innovation

Letter addressed by Professor Bror REXED, Chairman of the Group of Experts to Mr. Emile van LENNEP, Secretary-General of OECD.

Dear Mr. Secretary-General,

On behalf of your ad hoc Group of Experts, I take pleasure in transmitting herewith the report of the Group under the title « New Directions in Education for Changing Health Care Systems ».

In approaching its task, the Group began with an assessment of the policies and practices which health care systems in Member countries are now adopting in response to economic and social pressures. It is our conclusion that major trends are now evident : a reorientation toward individualised health care and prevention at community level (" primary health care "), and parallel efforts toward greater cost-effectiveness in hospital and specialised health care. This reorientation may be expected to continue for the next decade, and will involve new methods of interprofessional teamwork, new regionalised management structures, and systematic retraining of professional personnel now in practice. Given the fact that health care system expenditures total 4 to 8 per cent of Gross National Products, and that health care employs 4 to 6 per cent of national labour forces, this reorientation has major economic as well as social significance.

When the Group considered current policies and practices in education of the health professions, it became clear that vigorous efforts are called for if the reorientation of health care systems is to be achieved in a timely way, and without unnecessary financial and social cost. In general, despite valuable innovatory examples, educational systems have not undertaken comprehensive measures to meet new health care needs, and emerging practitioners are ill-prepared to grapple with the functions that must be performed. Much more educational effort must be located in community settings, and must incorporate interprofessional teaching as well as preparation in management and social sciences, if serious dislocations are to be avoided. Continuing education and recurrent education of those now practising must be systematically expanded if the reorientation is not to suffer a generation's delay.

Fortunately, and most importantly, we found persuasive evidence that educational reforms can be brought about. Productive examples of conjoint education/health care interaction are associated with the necessary educational responses, and can be stimulated by a series of coordinated government actions : clear health policies, practices which favour intersectoral planning and interagency coordination at regional levels, improved information and management systems.

It is our view that Member countries stand to benefit significantly from further OECD activity in the area of health, most especially on those facets of the problem which are linked to general economic considerations, social policy, and intersectoral planning. We believe that such activities can be soundly developed from the base of existing efforts by the Organisation, and could complement efforts by other international organisations such as the World Health Organisation, the International Labour Office, and the United Nations Educational Social and Cultural Organisation.

We hope that the findings and conclusions of our Report will help the Organisation and the Member countries to improve the quality and accessibility of health care in years to come.

Yours sincerely,
BROR REXED

The opinions expressed and arguments employed in this publication are the responsability of the Group of Experts and do not necessarily represent those of the OECD.

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Part I

MANDATE, METHODS OF INQUIRY, CONCLUSIONS, AND PROPOSALS FOR ACTION

Section 1

MANDATE AND METHODS OF INQUIRY

This study was commissioned by the Secretary-General of the Organisation for Economic Co-operation and Development (OECD). It was carried out between January 1973 and June 1974, under the auspices of the OECD's Centre for Educational Research and Innovation (CERI), with the aid of financial support from the Josiah Macy, Jr. Foundation.

During the period of our efforts, this Group has attempted to pursue certain general objectives expressed by CERI's Governing Board and confirmed by the Council of the OECD :

i) « to identify major needs and possibilities for innovation in health education in the OECD countries, in the context of the organisation and management of health care systems » ;

ii) « to study alternative ways and means of meeting such needs through international co-operation, bearing in mind the respective roles of the OECD and other international organisations » ;

iii) « to report to the Secretary-General, who will submit proposals as appropriate to the Governing Board and to the Council ».

It must be observed that the term « health education », as used in this statement, was expressly intended to designate the spectrum of post-secondary programmes for the education of health professions and occupations. Thus, it includes courses ranging in length from 2 years (for certain technologists and nursing personnel) to 12 years (for specialisations within the medical profession).

In undertaking such a far-ranging inquiry in the short span of a year and a half this Group attempted to maintain a sharp focus on the strategic issues involved — the directions now being followed by health care systems, innovative educational efforts best co-ordinated with those trends, and the forces which seem to promote positive alliances between health care and education. These issues were examined by means of synthesis of available national and international statistical and descriptive material, supplemented as necessary by commissioned reports, consultations and staff site visits. Most of this material is summarised in Part II of this Report, and certain more detailed special studies likely to be of wide interest are being published separately as OECD « Documents on sale ».

Before proceeding to a summary presentation of our conclusions and proposals for action, it is advisable to specify three over-riding assumptions held by the Group, as it studied the interaction between health care and professional education.

First, we have a firm conviction that the health of citizens, and their satisfaction with that health, can be influenced only in part by the efforts of health care systems and systems for educating the health professions. It is axiomatic that a population's health is also influenced by such general social factors as nutrition, environment, housing, alcohol, physical fitness, health education, traffic safety and disarmament. Health care systems currently play a crucial but limited role as they work toward ameliorating, eliminating or preventing illness. In the future, we believe that health professionals with broader preparation can play

much more important roles in the positive promotion of health. Thus, while our study has been limited to one part of the galaxy of factors impinging on health, we believe that that part is a pivotal one deserving special attention.

Second, we have concentrated on the problems and processes of the health care/education interaction as they appear primarily in the OECD Member countries. These problems and processes are therefore largely those of highly developed, post-industrial countries with large, complex and costly systems of health care and education. We believe that our report and recommendations will have value to those countries. In addition, however, our analysis may prove useful to other countries, even when their systems of health care are presently at different stages of development ; at the very least, our study may provide helpful guidelines for avoiding some of the pitfalls from which industrialised countries are now trying to extricate themselves.

Finally, we are concerned about the relationship between health care systems and systems for educating the health professions as a partnership oriented toward the future. We reject the notion of an educational enterprise slavishly subservient to current health care practices. Equally, we reject the notion of an educational enterprise pursuing its own aims independently of the needs of society and of health care systems. Instead, we have sought to identify means whereby education and health care can unite in a partnership aimed at a series of mutual changes, as improved health care systems of the future evolve.

Section 2

CONCLUSIONS

The Setting

There can be no doubt about the size and importance of systems of health care and of education for the health professions. Health care commands between 4 and 8 per cent of annual gross national products, constitutes approximately 4 - 6 per cent of the labour force, and is rapidly growing in most OECD Member countries. For effective operation, health care depends upon educational systems to prepare students in scores of professions and occupations ; this intricate operation involves more than 10 per cent of national costs in post-secondary education.

To be sure, there are myriad national differences behind these global figures. Government participation in health care and education, for example, varies both in kind and in amount : in the United Kingdom the government is a direct provider for health care and education, while other countries fall at different points on the spectra of support and provision. Physicians, nurses, and specialised professions like optometry play different roles in different countries. Custom, affluence, geography and social attitudes have united to lend various structures and characteristics to the systems (or non-systems) of health care and education. Despite these differences, however, one finds the same phenomena in country after country : growth, specialisation, rising costs.

It is not hard to recognise the reasons for these phenomena. Health care is an intensely personal issue ; for each citizen, it is linked to care and cure, to questions of life and death for himself and his family. The scientific and technologic advances of the twentieth century have widened the real ability of the health professions to help and to cure. The same scientific and technologic advances have made possible the relative affluence of modern industrial societies. A better-informed citizenry with more resources at its command has sought more and more benefits from health systems, as it has from such other parts of the service sector as education, social services, transportation and communication.

New Directions for Health Care and Education

The Movement Towards Primary Health Care

In the last decade, however, a new set of pressures has come to bear on health care and education. Emanating from citizens, professionals and government leaders alike, they call for changes in the present system, especially for :

- improved access to health care, in terms of time, distance, and finances ;
- improved quality of health care, in technical and personal terms ;
- more effective control of expenditures and greater cost-effectiveness in these gargantuan systems ;
- extension into relatively neglected areas such as prevention, care of the aged and chronically ill, alcoholism, drug addiction, mental health and health education.

In response to these pressures, health care systems are in the process of restructuring. They are expanding their proportionate investments and concern in primary health care : intensive, community-based, health-oriented treatment of individuals and families.

It must be understood at the outset that the « primary health care » toward which health care systems are moving is a far cry from the medicine of the « general practitioner » or « house doctor » of 50 years ago. To be sure, it is still community based, providing the basic link between the individual and the health care system. But primary health care involves much more in today's world.

What is Primary Health Care ?

We consider primary health care to be a functional concept involving :

— access to the health care delivery system in times of trouble ; an effective, continually-available point of contact ;
— continuing contact with the system, for individuals and families. Such continuing relationships include not only remedial treatment for intermittent acute illnesses, but health education, health surveillance, health screening, prevention, and rehabilitation ;
— supervision and management of the health aspects of chronic disabilities not requiring specialised hospital treatment, but requiring long-term treatment at home or in facilities such as day care centres and facilities for the mentally retarded, the mentally ill, the chronically ill, or the elderly ;
— referral to other parts of the health care system, for purposes including specialised diagnostic procedures, specialised consultation, and specialised treatment of complicated illnesses ;
— necessary liaison with other social agencies and services, in connection with the provision of help for patients and families whose problems require a common approach by health professions and personnel from welfare and housing authorities, rehabilitation services, social security, and other community resources.

How is Primary Health Care organised ?

The organisation of primary health care is complex. Basically, it is aimed at individualised continuing care in community settings such as professional offices and clinics. It extends, however, into those domiciliary facilities which provide long-term care of the sort not requiring hospitalisation for specialised diagnosis or treatment. Of necessity, it must have linkages with

a) hospital/specialised health care, and
b) personnel outside the health care system.

Additionally, primary health care in the 1970s requires teamwork by a constellation of personnel. To tackle such problems as care of the elderly or treatment of drug abuse, teams of professionals are a necessity : physicians, nurses, social workers, home visitors and others. Other types of teams are called for in the treatment of chronic heart disease, or diabetes, or mental retardation, or health counselling. The particular mixture of professions differs from country to country, depending on various social, historical and legal factors — but in all cases, teamwork is a basic element.

It is toward the development and expansion of comprehensive and community-based primary health care that most countries are moving. One can see the trend in the group general practices of England, the community health centres of Australia and Sweden, the health maintenance organisations and neighbour-

hood health centres emerging in the United States, the emphasis on prevention and primary care in Belgium, France, the Netherlands and Germany. Names and structures differ, but the movement is toward the same function : more effective primary health care.

Concurrently, health care systems are pressing to establish better control over the size, cost and effectiveness of hospital and in-patient care, which consumes 50 - 70 per cent of annual health care expenditures. In part, this effort depends upon preventing the over-utilisation of hospitals by promoting treatment at home and in clinics. For the rest, it depends upon improved management : avoidance of duplication, sharing resources, advanced technology in central laboratories, rational work schedules, etc.

The Prospective Benefits of Change

The benefits that may be expected from this reorientation of health care systems are of major importance :

— improved accessibility and continuity of care ;
— decreased wastage of specialised health resources ;
— improved co-ordination of health care and other social services in dealing with patients and families ;
— the eventual evolution of more effective health maintenance and promotion.

For a number of reasons (more fully explored in Part II, Section 1) it is highly unlikely that this reorientation will reduce the size and costs of health care systems. The field is one in which new discoveries and techniques demand continual additions to the repertoire of services offered, and it is subject to the characteristic economic forces of the service sector : demand rising to match available resources, the absence of usual market controls, rising public and private expectations. What can come about, however, is that the rate of growth can be curbed by this redeployment of resources toward prevention and health maintenance. The redeployment should produce more benefits for the cost, in terms of such objectives as access and quality, and in terms of citizen satisfaction.

Responsive Changes in Education of the Health Professions

The movement toward primary health care calls for changes in the traditional partnerships between education and practice. Over the last 70 years this partnership has become localised : schools for physicians, nurses, physiotherapists, and other health professions have conducted the bulk of their teaching within the confines of more and more specialised hospitals — often dealing with only the rarest illnesses and the most elaborate forms of treatment. Students emerging from such education lack appropriate training for primary health care, and in fact are unprepared to cope properly with the need for teamwork, prevention, and continuing care of families.

The education system, therefore, is called upon to reorganise present practices. Within the present pattern, for example, there is a manifest need to place greater emphasis on preparation for child health and development, social psychiatry, rehabilitation and other areas of community significance for which professional personnel is in short supply. There is concomitant need to control expenditures on the training of other specialists such as surgeons, and to control the quantity while improving the quality of the specialists trained.

But new elements are also needed. Priority must be given to the growth of training opportunities in primary health care. This need exists not only for the range of health professions and occupations, but also for the management

personnel necessary for the administration of more organised and integrated systems of health services.

Models for such new elements have been proposed and implemented. They hinge upon insuring that students in all of the health professions :

— receive practical experience in a variety of community and family settings, as well as in specialised hospitals ;
— participate in joint practical learning experiences, so that they are better prepared for future teamwork ;
— become more fully informed and skilled in dealing with the host of social forces that impinge on community health care.

Examples of such programmes may be found on all sides and are described in more detail in Part II, Section 4. They vary in size and scope. There are regional patterns of interaction involving the full gamut of professions (as in Tromsö ; Norway ; Canada ; Finland), limited common training (medical and nursing students in neighbourhood and community health centres in the United States and Sweden) and sponsorship of community experience for one profession by special departments (of Community or Family Medicine, Public Health Nursing, etc.).

Progress toward reorientation of health care and education has been fitful, however, for a wide range of reasons.

One of the major constraints on rapid action, obviously, is the need to preserve the positive qualities of the systems that now operate. Excellent modern hospitals must be maintained ; biomedical research, on which future advances in health care depend, must continue and expand ; educational responsibilities to undergraduate and graduate students in the basic sciences must be carried out.

But there are constraints of other sorts as well. In health care the speed of transition is affected by previous capital investments, entrenched professional positions, established social hierarchies, a maze of statutory requirements and certification procedures, economic and labour market limitations, etc. Faced with these problems, and with recognised uncertainties regarding how best to provide primary health care, decision-makers have pursued an evolutionary approach to change. In a typical example, health authorities in England and Wales adopted a series of incremental actions over a decade : special financial incentives for general practice, preventive services, group practices, home care, paramedical services; construction of community health centres ; controls over specialisation ; opportunities for further education. In this process, they have gradually transformed the nature and status of primary health care. In country after country the same pattern emerges : the move toward primary health care begins tentatively, and the tempo accelerates as experience accumulates.

The picture is not so rosy, however, in respect of education of the health professions. Unfortunately, despite exhortations and successful experiments, more than 90 per cent of education for the health professions remains deeply rooted in hospitals and fragmented as regards joint professional preparation — insulated from teamwork and primary health care.

Much of the laggard response is undoubtedly due to the nature of educational institutions : long-standing traditions of institutional and faculty autonomy, historical and geographic unions with specific hospitals, academic priorities which tend to centre on those complex illnesses and treatments requiring the most elaborate bioscientific approaches. All of these factors militate against the kinds of inter-institutional co-operation and community-based teaching that are necessary if health professionals are to be prepared for teamwork and primary health care.

But it is very clear, as we will show in Part II, Sections 1 and 4, that a very

large part of meagre responsiveness of educational institutions is that they are enmeshed in systems which rarely help, and often impede, co-ordinated action and community based education :

— at national and state levels, there are few instances of joint planning and programming, as between health and education authorities ;
— within education, responsibility for the health professions is divided — between university and non-university authorities, or among autonomous institutions — and linkage mechanisms are usually absent ;
— funding for professional schools of all sorts is funnelled heavily (and sometimes exclusively) through hospitals ; even when they are not so channelled, educational institutions may have no means of access to primary health care settings when these are managed in an entrepreneurial fashion.

We believe it is especially significant that the most vigorous educational responses have taken place when national health and education authorities have jointly established the means for co-operation, and when institutions have established partnerships with the whole of regional health care.

Lurking behind these problems facing health care and education, however, lies another important issue : the speed and effectiveness of transition for the pair of systems. If educational changes are limited to today's students, major reorientations of the systems will not be possible for a generation. It is our view that this problem can only be attacked by a major re-education programme of existing professionals, jointly undertaken by the two systems.

Section 3

PROPOSALS FOR ACTION

In setting forth our recommendations, we find ourselves in a paradoxical position. On the one hand, the general shape of what needs to be done, and how it may be done, emerged with startling clarity. On the other hand, each one of OECD's 24 Member countries has a unique configuration of health care and education. Any given action, therefore, may be in any one of a dozen hands ; central or local government, professional associations, boards of trustees, legislatures, hospital directors, insurance companies, religious bodies, etc. There are a few basic proposals, but scores of audiences to which they must be addressed.

We must, therefore, couch our recommendations in terms of objectives and mechanisms, trusting that a few examples will suffice to identify the kind of audience to whom these recommendations are addressed in any particular country.

A. National Health Policies

Again and again, we have found that concerted movement toward primary health care has been associated with a clearly enunciated health policy. Such a national health policy, we believe, is one which :

- enunciates middle-range and long-range problems and possibilities in respect of the nation's health, considering not only personal health care, but also the impact on health of working conditions, environment, housing, education and social services ;
- sets forth general planning guidelines around which health care, education and other related systems can orient their activities at national, regional, and local levels ;
- is based upon widespread public discussion, consultation with citizens, professionals, and government authorities and upon necessary special studies and surveys.

We make a sharp distinction here between such policies and government action — which perforce must respond to competing national problems and priorities and to economic constraints. Indeed, the clearest and most effective policy statements appear to be enunciated by autonomous but government-sponsored bodies such as the Ontario Council of Health, the Australian Hospitals and Health Services Commission or the Swedish National Board of Health and Welfare. Such enunciations then can serve as a basis for subsequent decisions and actions by government health services, as well as by educational authorities, professional organisations, and individuals.

We particularly emphasise the need for such policies to be developed and stated in a continuing and comprehensive fashion. At the moment, we are confident that a major element would be the development of primary health care. We are equally confident that the next decades will require shifts in emphasis, however — and only a permanent vehicle can provide continuing guidance for co-ordinated action.

There is no gainsaying the fact that the comprehensive policies developed at this time will be imperfect : the variables involved in policy formation are

diffuse, there are gaps in the data base available, and adequate evaluation techniques (health indicators, measurements of output, and monitoring mechanisms) are only in early developmental phases. The evidence suggests, however, that reasonable formulations with great practical value can be generated even now. The accuracy of such preliminary efforts can no doubt be accelerated by supporting iistitutes of the sort proposed by McLachlan (1975) ; the Institute for the Planning and Rationalisation of Health and Social Welfare Services (SPRI) serves some of these developmental functions in Sweden (Tengstam, 1975).

Recommendation 1. **Clearly expressed national health policies should be developed, preferably by permanently-established planning mechanisms in which providers and consumers of health care play a participatory role**

B. Working Integration of Health Care and Education

Health care is delivered in homes, clinics, offices, hospitals, and other institutions. Education of future professionals is in the hands of departments, schools, and universities. If students are to be prepared to serve in the spectrum of health care, they must have joint learning experiences along that spectrum. Only local authorities and agencies can insure the availability of suitable environments for such training, (such as teaching facilities in community clinics) and suitable interactions of faculty, students and practitioners. Only a sufficiently embracing population area can cover the spectrum from primary health care to specialisations such as neurosurgery, and the spectrum of professional schools (medicine, nursing, pharmacy, physiotherapy, etc.).

Our examination indicates that the full sweep of health care settings in which students should learn involves regional ranging in size from 0.5 to 2.0 millions in population. Within such regions, conjoint efforts by education and health care are a prerequisite if a proper distribution of environments for learning is to be provided — in university hospitals, in community clinics, in home care, etc. This sort of conjoint action has indeed developed in a number of settings in Europe and North America, as we shall show in Part II, Section 4. The origins of the developments have been varied : the leadership of an educational institution, geographical necessity, government policy. In the most vigorous examples, however, we found two common themes : national policies (of financing, of administration) that permitted or encouraged the partnership at the regional level, and concentrated efforts by both systems at the regional level.

Too often, however, education and health care are viewed and administered separately, and conjoint action is absent. National policies and practices sometimes block regional interactions ; educational institutions or health care systems of a region may not take advantage of positive national policies.

We believe, therefore, that national health care policies and practices should be constructed in such a way as to foster education/health care interaction at the regional level. Additionally, institutions at that level should develop mechanisms to implement such action.

Recommendation 2. **National health care policies should foster conjoint education/health care action at the regional level, and institutions at that level should establish mechanisms to implement such action**

C. Co-ordinated Government Action

Within whatever policy, and with whatever structure of health care and education, government is the dominant figure. Tax-derived funds support the education of physicians, nurses, and other health professions ; they build and staff hospitals and clinics ; they provide or underwrite health care delivery. Health care policies and practices are everywhere hot political issues.

Even when control of health care and education are clearly vested in government ministries, however, effective co-operation is the rare exception rather than the rule. In various country situations, examples such as the following may be found :

— while one government agency is subsidising and promoting primary health care, another agency locks teaching institutions to specialised hospitals by funding patterns ;
— while health authorities regionalise, education authorities are unwilling to encourage regional ensembles in education of the health professions ;
— while health agencies decry the surplus of certain types of specialists and plead for primary care personnel, educational authorities produce more specialists ;
— after educational authorities provide students with years of « instruction », health authorities add several more years of « training » to prepare them for the realities of practice.

The mammoth size of health care and education, coupled with the classic governmental problem of interagency co-operation, make a certain amount of difficulty in co-ordination inevitable. The present level of co-ordination is so low, however, that we believe it requires drastic action. In our view, the current situation :

— retards the improvement of health care delivery to citizens ;
— impedes access and reduces the quality of health care ;
— constitutes a waste of human and financial resources.

Examples of developing co-operation may be found in a number of state or local situations. When they have emerged, the manifestations include :

— proper environments for training, e.g. in clinics as well as hospitals ;
— stipends for trainees ;
— co-ordinated patterns of training and employment ;
— re-organised constituency of faculties to include primary health care personnel as well as specialists ;
— modifications of numbers of trainees in different fields in accordance with national needs.

What is called for is a set of co-operative mechanisms for planning and programming, at all levels, between two government agencies concerned with the public good — the health and education authorities. It can be achieved, as experience has shown. If the agencies directly involved cannot or do not take the initiative in creating such mechanisms, we recommend that higher political authorities, or ministries of finance, take steps to bring them into being, either on social or financial grounds.

Recommendation 3. **Permanent means of co-ordinating and integrating government action in health care and education of the health professions should be established**

D. Research in Health Care Delivery

There is no « blueprint » for health care itself, let alone the relationship between health care and the host of other factors which influence health. We believe there is a strong current need for primary health care — but even there one finds a plethora of unresolved questions : what teams, what professions, what functions, what relationships ?

For the future, more questions arise : how best to determine and monitor the quality of health care, the desires and needs of people, the « trade-offs » between increased investments in health care against, for example, better working conditions for persons in hazardous or unsafe jobs.

In view of the mammoth size of health care systems, the expanding costs, and the many unknowns that must be faced, we believe there is a need for massive investments, and for international co-operation, in research into the problems of health and health care delivery. Among the priority issues identified in Part II, Section 3 are the exploration of new professional roles ; pilot programmes in health assessment and emergency care ; studies of productivity and cost-effectiveness ; assessment of new models for health care delivery ; the development of new health information systems and health and other social indicators.

We believe that a range of measures is necessary to assure progress on these issues — the encouragement and support of pilot and experimental models of health care delivery, basic research endeavours, and careful evaluation programmes The scope of these efforts should be maintained at a comparable level with research efforts concerned with the causes and treatment of specific diseases. The entirety should be designed to support a continually rolling interaction between research and application. Since efforts of this type will inevitably call for contributions from professions and agencies not now commonly associated with health care systems or institutions educating the health professions, we would favour placing primary responsibility for guiding such efforts in the national policy-formulating mechanism suggested in Recommendation 1.

Recommendation 4. **Government agencies, educational institutions, and professional organisations should encourage innovation and experimentation in different health care systems and make adequate provision for research into and evaluation of these programmes**

E. Continuing and Recurrent Education

A restructuring of the balance between initial training of the health professions and patterns of life-long learning is a need becoming more and more apparent. Even if all initial training can rapidly shift to the integrated approach suggested in Recommendation 2, expanded efforts in continuing and recurrent education are warranted for several reasons :

— maintaining the quality of health care. Every practitioner and teacher requires periodic renewal of his knowledge and skill to compensate for the rapid obsolescence of scientific and technical knowledge ;

— avoiding a generation's delay in the re-orientation of health care. New methods of health care delivery call on professionals to work in new ways, and to acquire skills not developed in their earlier training (e.g. management abilities). Unless existing personnel are systematically prepared, programmes for change will not function ;

— preventing the proliferation of specialisations. As new functions develop in health care, the adaptation of existing professionals to fill new roles is preferable to the creation of new professions and technologies ;
— providing career mobility. The present « front-loaded » pattern of education leads to dead-end careers ; a system of recurrent education could provide workers with real opportunities for vertical and lateral mobility geared to individual capacities ;
— teaching the teachers. New objectives in education — for teamwork and primary care — call for new pedagogical approaches and instructional techniques ; teachers must constantly refurbish their knowledge and skill if they are to meet those objectives.

Maintaining and widening the professional competence of practitioners and teachers is already being vigorously pursued in a number of OECD Member countries, under the stimulus of national health authorities or professional societies. The objectives of providing career mobility and preparation for changing occupational patterns are also recognised, not only for health, but for society as a whole. Thus, one finds that such objectives are basic to policies of Recurrent Education and career education, as advocated or adopted by a number of countries ; they are equally evident in the French law of 1971 which guarantees paid educational leaves of absence to workers, and the German Labour Promotion Act of 1969, which provides special educational measures to deal with changing occupational patterns. We believe, therefore, that adoption of such action would not only be beneficial in the field of health care, but would also contribute to and benefit from, similar efforts in other education and employment areas.

Recommendation 5. **Health care systems should join with educational systems in mounting comprehensive continuing education programmes for all practising health professionals, managers, and teachers**

F. International Efforts

In many ways health care systems are facing development problems similar to those that confronted science, technology and industry a generation ago. Change is needed, and indeed is already under way. But how best to guide it, how best to assure that it serves the people, how best to assure that it goes on in the most cost-effective fashion — all these are unknowns. Different nations and regions are adopting different approaches te the problem as they move ahead.

The benefits of pluralism are clear, and we favour such a diversified approach. The stakes are extremely high, however : miscalculations can have major reverberations in both human and economic terms — witness harmful side-effects of drugs, surpluses and scarcities in different health professions, large sums of money lost through duplication and overlapping professional jurisdictions, treatments of questionable effectiveness, overinvestment in hospital facilities, large sums of money poured into screening programmes, etc. What is needed, in fact, is a means whereby the experience gained from pluralistic approaches can be rapidly and effectively shared by the countries whose governments are supporting health care and education of the health professions.

We believe, therefore, that it is important that policies and programmes used by OECD countries be continuously assessed and the results of these assessments made available. Both health care systems and systems for educating the health professions should be examined and evaluated. Such an action belongs

to the normal sphere of activity of the World Health Organisation. Additional point of action of OECD and foundations would be beneficial to all concerned.

In addition it must be emphasised that no forum can work effectively without adequate basic information, which now exists in only the most rudimentary forms. At national and international levels, for example, the current information base is very limited :

- — personnel are reported by degree rather than function (e.g. primary care or hospital care) despite the fact that different national systems have wide differences in function-degree relationships ;
- — expenditures are reported by administrative units (e.g. social welfare, health department), location (e.g. hospitals, pharmacies) and professions (e.g. physicians, nurses) rather than by function ;
- — international figures provide no detailed analysis of personnel or expenditures.

OECD Member countries are internally aware of these difficulties, and are developing improved systems of information, analysis, and accounting. Establishment of an international serial reporting mechanism would guide national developments and insure internal compatibility. Such a mechanism might be developed co-operatively, with appropriate division of labour, by such organisations as The International Labour Office, the World Health Organisation, and the OECD.

Recommendation 6. **Co-operative international efforts should aim at a) sharing experiences in developing health care policies and programmes and in health care research, and b) establishing a sound data base about health care personnel and expenditures**

SUMMARY

In the preceding pages, we have given a synopsis of our findings and pointed out the major elements that could help forge new and more effective partnerships between health care and education of the health professions.

At this time systems of education and health care must co-operate in order better to serve society in more humane and effective ways. We believe that the six proposals we have made are essential to that co-operation. We have concentrated on :

- — two urgent needs ; clear expression of national health policies, and integration of health care and education of the health professions at a working level ;
- — two critical factors in satisfying those needs : co-ordinated government action and substantial investments in innovation and evaluation ;
- — two important processes that can help timely progress : large-scale reeducation and international co-operation.

As important as any prescription for specific changes in the health and educational systems, or the governance and interaction of the systems, is the need to establish mechanisms and processes in the organisations concerned, in such a way as to enhance their capability to respond more rapidly and effectively to the changing needs of the future.

Part II

A REVIEW OF PRESENT TRENDS IN OECD MEMBER COUNTRIES

Section 1

HEALTH CARE AND PROFESSIONAL EDUCATION IN CONTEXT

The very fact that both health care and education are such wide subjects lends a double importance to establishing a clear context for this Report. On the one hand, health and education touch each of us personally, and our perceptions are influenced by these experiences. On the other hand, the working life of millions of professionals is entirely spent within the fields of health or education, and their perceptions may easily become intraprofessional rather than objective. In the absence of clear mutual understanding, therefore, debates about health care and education all too frequently drift into disarray amidst a welter of misconceptions, oversimplifications, evangelism and special interest pressures. When, as in the case of this Report, health care and education are viewed in an international light, the need for a clear context is even more vital.

The purpose of this section, then, is both positive and negative. In providing a picture of the general characteristics of health care and education of the health professions — their size, their growth rates, their complexity — we hope to focus attention on the importance of these topics. The same characteristics should constitute a warning against oversimplification or hopes for easy solutions. Finally, the fact that these characteristics are shared by other sectors of society will, we hope, suggest that the two fields of concern cannot go it alone ; many problems in health care and education will only be resolved in the framework of broader social changes.

Health Care Systems

Health care systems are gargantuan, and they are growing. Perhaps the clearest yardstick is a financial one ; most OECD Member countries spend between 4 and 8 per cent of their Gross National Products annually on health care, and the rate is climbing (Table I, Figure 1). Such figures certainly prove that health care is an important economic as well as social factor in modern life, and suggest the high value that citizens of industrialised nations place on health.

Equally, these expenditure curves can stimulate questions. Will they level off spontaneously ? Is there a point at which expenditures must be contained ? What is the reason for escalating expenditures ? Are rising expenditures being matched by rising levels of health, or by health care improvements ?

Answers to some of these questions can be found in a scrutiny of more detailed expenditure patterns. Thus, most nations now spend 50 to 60 per cent of health care expenditures on hospital care (of which some 70 per cent is allocated to surgery) ; at the same time, it is that 95 per cent of health problems occur and are treated outside hospitals. 25 per cent of health expenditures in the US are directed to that 10 per cent of the population 65 years of age and over (Knowles) ; as life expectancy increases, such expenditures will be predictably higher.

Unfortunately, the tidy simplicity of expenditures leaves too many questions unanswered. The fact that some $100 billion is annually spent on health in the

Figure 1. EXPENDITURES ON HEALTH CARE IN CERTAIN OECD MEMBER COUNTRIES

As a percentage of GNP at current prices, 1960-71

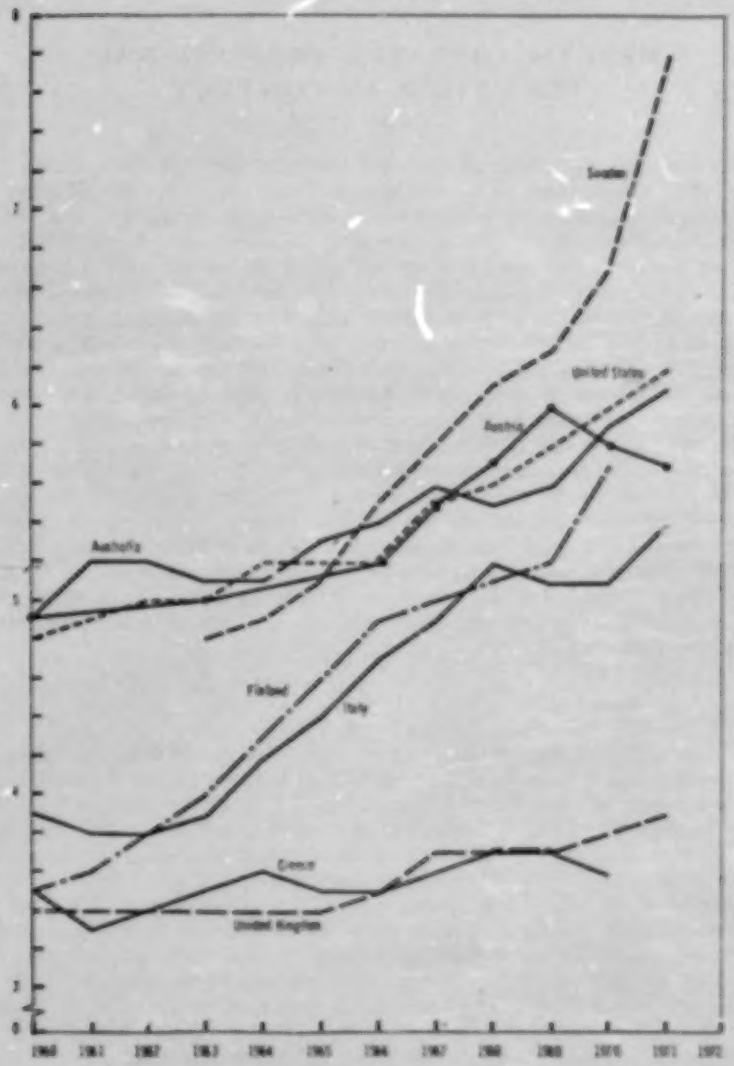


TABLE I. EXPENDITURES ON HEALTH CARE IN CERTAIN OECD MEMBER COUNTRIES

As a percentage of GNP at current prices, 1960-71

	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960
Australia	6.1	5.9	5.6	5.5	5.6	5.4	5.3	5.1	5.1	5.2	5.2	4.9
Austria	5.7	5.8	6.0	5.7	5.5	5.2	—	—	5.0	—	—	4.9
Finland	5.4	5.1	5.1	5.2	4.9	4.7	4.4	4.2	3.9	3.8	3.6	3.5
Greece	—	3.6	3.7	3.7	3.6	3.5	3.5	3.6	3.5	3.4	3.3	3.5
Italy	—	5.7	5.2	5.1	5.0	4.9	4.6	4.3	4.0	3.8	3.8	3.9
Sweden	7.8	6.7	6.3	6.1	5.8	5.5	5.1	4.9	4.8	—	—	—
United Kingdom	3.9	3.8	3.7	3.7	3.7	3.5	3.4	3.4	3.4	3.4	3.4	3.4
United States	6.2	6.0	5.8	5.6	5.5	5.2	5.2	5.2	5.0	5.0	4.9	4.8

Sources : OECD, *National Accounts for OECD Member Countries*. Health Care costs are exclusive of capital expenditures and the costs of education for the health professions.

UN, *United Nations National Accounts*, for 1969 and 1970 data on government health care expenditures in Italy.

USA may give rise to both satisfaction and concern, but it does not lead to any understanding of the forces at work. For such understanding, it is necessary to examine the health care systems from other viewpoints : personnel, financing, and economic characteristics.

Personnel

Like most service organisations, health care systems are labour-intensive. The bulk of health care expenditures is dedicated to personnel, and more sophisticated patterns of treatment have given rise to mounting personnel needs. In most OECD countries, 3 to 5 per cent of the labour force is employed in health care, and it usually ranks as one of the nation's 5 largest fields of employment (Table II, Figure II).

Not only has the overall size of the health labour force grown, but so also has its complexity. One now recognises more than 300 different health occupations in the USA, and the shifting nature of the health labour force composition in that country is illustrated in Table III, Figure III.

These two trends — an expanding labour force and increasing specialisation — can be found in all health care systems, despite internal differences in the proportional mixes of professions and in professional roles, e.g. the use of midwives and general practitioners in some nations but of specialists in others, wide differences in surgeons : population ratios between countries. The overall pattern of growth in size and complexity is everywhere apparent.

This phenomena of overall similarity despite internal differences is significant in our later considerations. As we shall demonstrate in Section 3, the **functions** of the health care systems are internationally similar and comparable, and it is those functions which determine the overall dimensions of the health care labour force. Internal national variations, determined as they are by history, geography, social attitudes and politics, simply reflect different **means** of performing the same functions.

The distinction can be easily recognised in an example cited by Boulin (1971) in an analysis of the difficulties faced by the European Economic Community in developing Community-wide freedom of movement for health professionals. As he pointed out, the roles of different professions are variously defined by different nations. In one country, for example, a dentist is largely restricted to work

on teeth ; in another, his field of activity may include the face, the mouth and the throat, as well. Clearly, the **function** of wide-ranging oral surgery must be performed in both countries ; the **means** of performing the function (whether by an « Oral Surgeon », or by combinations of dentists and various surgical specialists) is different.

TABLE II. PERCENTAGE OF TOTAL LABOUR FORCE ENGAGED IN THE HEALTH CARE INDUSTRY IN CERTAIN OECD MEMBER COUNTRIES, 1960-70

	Year	Total Labour Force	Persons in Health Care Industry	Per cent of Total Labour Force in Health Care Industry
Australia	1961	4,225,096	134,453	3.2
	1966	4,856,455	190,672	3.9
Canada	1961	6,471,850	307,515	4.8
	1970	8,374,000	502,282	6.0
Denmark	1960	2,007,639	76,981	3.8
	1965	2,198,628	94,407	4.3
France	1962	18,956,380	536,160	2.8
	1968	20,002,240	730,660	3.7
Greece	1961	3,638,601	38,708	1.1
	1971	3,283,880	40,680	1.2
Ireland (Republic of)	1961	1,052,539	30,331	2.9
	1966	1,065,987	33,576	3.1
Japan	1960	43,690,500	647,266	1.5
	1971	50,630,000	961,000	1.9
New Zealand	1961	895,363	37,237	4.2
	1966	1,026,039	44,608	4.3
Sweden	1960	3,244,084	119,391	3.7
	1970	3,412,668	210,407	6.2
United Kingdom	1960	25,072,000	774,000	3.1
	1970	25,675,000	1,037,000	4.0
United States	1960	72,142,000	2,642,300	3.7
	1970	85,903,000	4,246,187	4.9

Sources : Bureau of Census estimates 1970 figures for Canada taken from Aziz, Jawed, "Number of Persons Employed in the Health Service Industry".

Some of the misleading qualities of non-functional manpower statistics are conspicuous. Physician : population ratios, for example, are crude indicators of adequate health care when they differ by orders of magnitude : a country with 1 physician per 500 population is manifestly in a better position than one with 1 physician per 50,000 population. When the range of differences is between 1:600 and 1:1,000, however, as is the case in OECD Member countries, such figures lose their significance (Table IV). What matters instead is **function** : what do the physicians do ? What do the other health personnel do ?

Figure II. PERCENTAGE OF TOTAL LABOUR FORCE EMPLOYED IN THE HEALTH CARE INDUSTRY IN CERTAIN OECD MEMBER COUNTRIES, 1960-1970

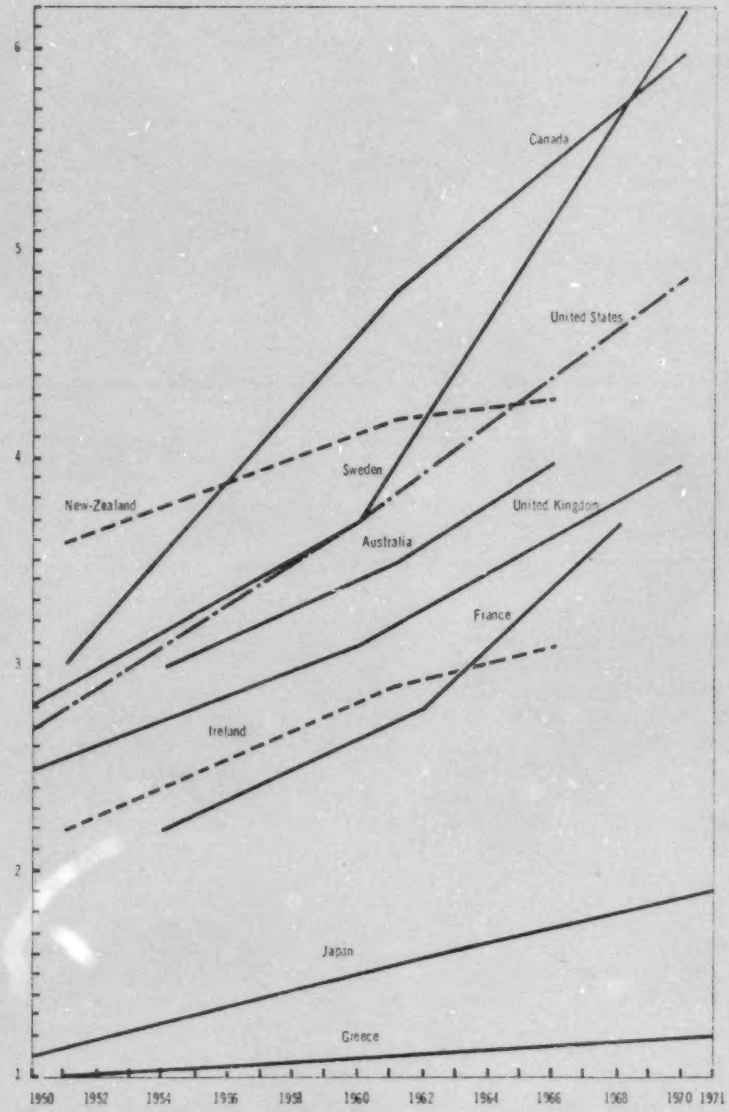


TABLE III. COMPOSITION OF THE HEALTH CARE LABOUR FORCE[1] IN THE UNITED STATES 1950-70

Thousands of persons

	1950	1960	1967	1970
Physicians	219,900	259,400	305,500	323,000
Selected practitioners[2]	382,700	439,500	505,300	570,600
Medical related allied health personnel[3]	522,700	718,700	956,800	1,437,450
Dentists	600,600	807,900	1,055,500	1,540,350
Dental-related allied health personnel[4]	683,800	927,900	1,192,500	1,683,350
Registered Nurses	1,058,800	1,431,900	1,851,500	2,406,350
Other Nursing Personnel[5]	1,420,800	2,112,900	2,946,500	3,678,350
Environmental Personnel	1,483,800	2,228,900	3,164,500	3,946,990
All other services[6]	1,682,800	2,493,400	3,515,000	4,365,340

1. Inactive persons with appropriate experience and/or training are not included.
2. Refers to optometrists, pharmacists, podiatrists, clinical psychologists, clinical social workers, chiropractors, naturopaths, and lay midwives.
3. Includes assistants to category *a*) ; also personnel in administration, biomedical engineering, clinical laboratory services, dietetic and nutritional services, health education, medical record services, occupational therapy, orthotic and prosthetic technology, specialised rehabilitation services, speech pathology and audiology, other.
4. Dental hygienists, dental assistants and dental laboratory technicians, other.
5. Licensed practical nurses, nursing aides, orderlies, attendants, other.
6. " All other " includes personnel in information and communication, library services, mathematical sciences, natural sciences (other than clinical laboratory services and environmental health), social sciences (other than psychology), secretarial and office services, veterinary medicine, vocational rehabilitation counseling, other.

Sources : US DHEW, National Center for Health Statistics, *Health Resources Statistics, 1971*. US DHEW, Bureau of Health Professions, Education and Manpower Training, *Health and Requirements : 1950-80*. (Author : Pennell, Maryland and Hoover, David).

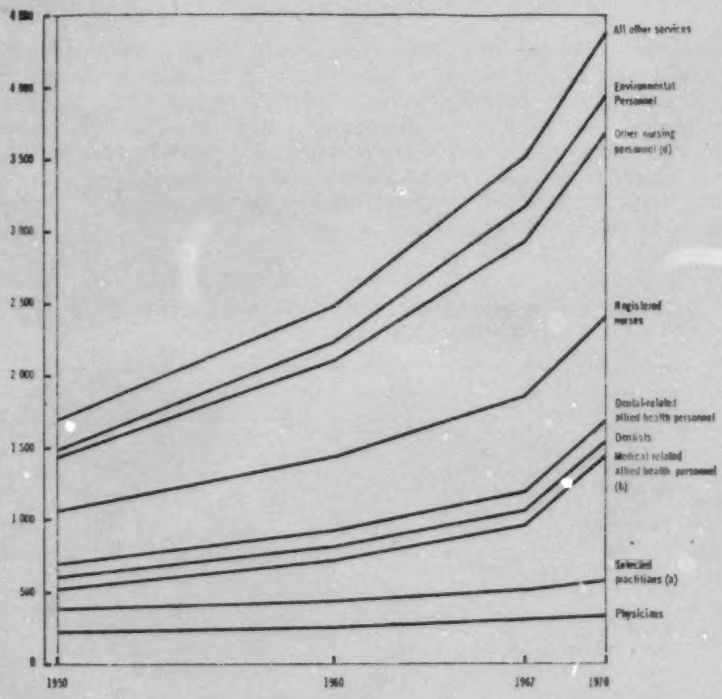
Financing

In general, financing of health care systems has become a government responsibility. In most OECD Member countries, government support is both indirect and direct : some resources go to the providers of service through compulsory insurance programmes (frequently subsidised by tax revenues), while other resources are channelled directly to government-operated hospitals, clinics and special programmes. In the United Kingdom, the government is directly responsible for almost all health services ; the Italian government has announced plans to institute a similar system.

To be sure, compulsory insurance patterns are not equally comprehensive in all countries. In some it is restricted to salaried employees, and in the United States it is limited to the elderly. The trends, however, are in the direction of increasingly universal coverage, and increasingly direct government financing. In the mid-1960's public expenditures constituted major portions of national expenditures on health ; in some cases, public expenditures were predominant (94 per cent in the United Kingdom, 88 per cent in Austria, 76 per cent in Sweden) ; in others, public expenditures were lower but still significant (42 per cent in Norway, 39 per cent in the United States) (OECD, 1972).

The cumulative effect of these trends is, of course, to remove the field of health care from an open market situation. Since the consumer is « covered » either by insurance or by government provision of services, the demands he places on health care systems are not « expressed demand » in the usual economic sense. This is perhaps even more true of insurance programmes than of government-operated health care, as maintained by Salter (1973). In the latter, the

Figure III. COMPOSITION OF THE HEALTH CARE LABOUR FORCE IN THE UNITED STATES - 1950-1970



government can at least try to exercise direct control over the availability and distribution of resources. Insurance schemes, on the other hand, give providing institutions no motivation to impose limits on services, and give consumers no reason to restrict their use of services because their net cost is the same in any event (Feldstein, 1973). Warping factors in insurance programmes are even greater when they are voluntary than when they are government-controlled. In the USA, for example, consumer preferences have been directed toward insurance that covers catastrophic contingencies and in particular hospitalisation ; one finds there the paradoxical situation that many patients will pay less out of pocket if they are hospitalised than if they receive comparable treatment through less expensive (but uninsured) ambulatory service. In such a situation, a vicious circle favouring rising costs is established.

Government and insurance participation in the costs of health care, therefore, may be more or less effectively designed to control costs. In all cases, however, the greater the participation the more health care becomes a social service subject to public pressures for expansion and improvement — and rising costs follow.

Economic Characteristics

Section 3 will deal in some detail with the policies and structures that presently obtain in the health care systems of some of the OECD Member countries.

In this section, we shall provide only a brief sketch of some of the economic phenomena with which those policies and structures must grapple.

At the outset it must be recognised that health care today has an ever-expanding repertoire of functions. As scientific knowledge advances, the list of diagnostic and treatment procedures grows ever longer, more refined, more complex, and more expensive. In general, this is all to the good : lives are saved, disabilities corrected, in myriad new ways. But it must be recognised that these are incremental, not substitutive, advances. Science and technology are not here replacing old methods with new and more cost-effective ones, as occurs in industry ; instead, the new methods are additive, reaching into previously untouched areas. The result is direct pressure toward increasing expenditures in order to provide a greater number of services.

TABLE IV. POPULATION-PHYSICIAN RATIOS IN OECD MEMBER COUNTRIES, FOR 1969

	Population per Physician
Austria	550
Belgium	640
Canada	710
Denmark	690
Finland	1,050
Germany (Fed. Republic)[1]	590
Italy	560
Japan	900
Luxembourg	980
Netherlands	870
New Zealand	870
Norway	710
Portugal	1,190
Spain[2]	750
Sweden	770
Zwitzerland	720
United Kingdom :	
England and Wales	830
Scotland[3]	750
Northern Ireland[3]	760
United States	650

1. Including West Berlin.
2. Number on the register. Not all working in the country.
3. Estimated data. Personnel in government services.

Source : WHO, World Health Statistics Annual, 1969 ; Volume III : Health Personnel and Hospital Establishments.

A secondary consequence of introducing scientific and technologic advances into health services is the need for increasing expenditures on pre-existing services. To the extent that a new special diagnostic or treatment measure is successful, it creates a need for more general health care services. Successful attacks on infant mortality, for example, are the major factor in the increased life expectancy now enjoyed by most OECD Member countries ; but older people require more health care services than younger people. Modern medicine and surgery save lives that were previously lost ; but the residual effects of accidents and illnesses demand continuing treatments for the people thus spared.

Finally, the very nature of health care militates against economic gains of increased cost-effectiveness such as have been realised in industry and agriculture. Only rarely do new scientific and technological advances modify the labour-intensive characteristics of health care. When they do — as in these cases of immunisations and automated laboratory procedures — the benefits are marginal in an economic sense. For the most part, indeed, scientific and technological advances such as those in radiotherapy and neurosurgery tend to call for even more personnel dealing with fewer patients. In short, health care keeps getting more and more labour-intensive, as suggested in the previous section on manpower. In addition, basic incomes for the lowest-paid health workers are rising. Since personnel are the key to costs, a third force toward continually increasing expenditures in health care is at work.

In fact, decisions about the provision of health care services are rarely based on economic considerations. The process usually begins with a consideration of values, e.g. one decides that it is « good » to provide abortions, to reduce infant mortality, or to provide proper care for the crippled, the mentally retarded, and the elderly. It is very difficult to justify any of these actions in straightforward economic terms. When resources are limited, and choices must be made between one and another objective, decisions must be made on moral, ethical and social grounds.

Once value decisions have been made, cost-benefit and cost-effectiveness studies can indicate whether one or another technique of treatment seems preferable. But here, the issue becomes the level at which the actual choice of action is made. In the more centralised and planned health care systems, analysis of means is coming to be routinely carried out, and the most cost-effective one is promoted (e.g. office rather than hospital treatment of varicose veins). In less controlled systems, the actual decisions are in the hands of individual professionals, and there is consequently great diversity (and duplication) in the means that are used ; one economic analysis, indeed, suggests that it is in the best financial interest of the medical profession to choose the most complicated and exhaustive alternative treatment procedures as a way of maximising income (Lindsay, 1973). In any case, whether the system be centralised or not, professional privileges embodied in legal codes insure that treatment decisions are individually made ; it is merely the number of the options that is larger in the less controlled systems.

Manifestly, it is difficult to exercise economic control in a field which is a labour-intensive public service with increasing consumer demands, which has an ever-expanding repertoire of functions, which makes major investments in accordance with value systems rather than economic objectives, and in which individual professional choices of action abound. A unified approach that combines better management, a re-organisation of personnel functions, and a clearer definition of objectives would seem to be the key to progress, and indeed is the subject of considerable research at present (see Section 3).

Summary

Health care systems emerge, therefore, as large, expensive, growing, labour-intensive fields, in which the usual economic approaches and management techniques run foul of value systems, traditions, professional prerogatives, and conceptual ambiguities. That they are necessary is all too obvious — indeed, as we shall see, more health care is required. But the achievement of an improved level of health care within reasonable expenditure and personnel limits will require the resolution of the issues and uncertainties we have here set forth.

Systems for Education of the Health Professions

Systems for the education of the health professions fall under two spheres of influence : education and health care. In consequence we find in them a

Table V. EXPENDITURES ON HIGHER EDUCATION IN CERTAIN OECD MEMBER COUNTRIES AS A PERCENTAGE OF GNP AT CURRENT PRICES IN THE LAST DECADE

	1961	1970
Australia	0.3 (1958)	0.8 (970)
Belgium	0.2	1.0 (1969)
Canada	0.5	2.7
Denmark	0.3	1.2
France	0.2	0.6
Federal Republic of Germany	0.4	0.7
Japan	1.2	1.0 (1969)
Netherlands	0.3	1.2 (1969)
Norway	0.3	0.7
Sweden	0.3	1.0
United Kingdom (universities only)	0.3 (1962)	0.7 (1969)
United States	1.1 (1959/60)	2.5 (1970/71)

Source : OECD/ED(73)5, *The Cost and Finance of Higher Education Theme 4 : Planning and Finance of Post-Secondary Education*. OECD data collected from 1) UNESCO questionnaire on education costs and enrolments ; 2) Williams, Bruce, "The Escalating Costs of Universities", *The Australian University*, Vol. 10, No. 2 ; 3) *De Videregaende uddannelser*, 1970-71.

Table VI. GROWTH IN HIGHER EDUCATION ENROLMENTS IN OECD MEMBER COUNTRIES, 1960-1970

In thousands

	1960	1970
Australia	70.7	175.4
Austria	38.9	62.5
Belgium	52.0	127.1 (*e*)
Canada	286.3	711.1 (1969)
Denmark	32.5	77.1
Finland	29.2	67.1
France	256.0	778.8 (1969)
Germany	313.2 (1961)	494.9
Greece	30.5	84.6 (1969)
Iceland	0.8 (*e*)	1.4 (*e*)
Ireland	14.0	26.2
Italy	284.3	694.2
Japan	712.0	1,635.6
Luxembourg	0.5	0.6
Netherlands	109.4	229.5
Norway	21.7	49.3
Portugal	24.0	52.0
Spain	195.4	351.9
Sweden	47.9	145.7
Switzerland	30.0 (*e*)	43.0 (1968)
Turkey	65.4	155.4
United Kingdom	287.7 (*e*)	589.7 (1969)
United States	3,610.0	7,608.0

Symbol (*e*) signifies estimate.

Source : OECD/ED(74)7, *Quantitative Trends in Post Secondary Education, 1960-70.*

blending of academic priorities and service priorities — a blending which is not always in proper balance, but which is always a source of tension.

In the present study, we have limited our concern to educational efforts at the post-secondary level. Although a certain amount of education for the health professions and occupations takes place at secondary level, the situation is difficult to define, and varies widely from country to country. On the other hand, the bulk of professional education is generally at post-secondary level, and findings there can have reasonable international comparability.

Post-secondary education has, of course, experienced the same phenomenal growth in the last decade as has health care. Tables V and VI and Figures IV and V, showing national expenditures and enrolments, readily demonstrate this.

Within the general educational expansion, efforts for the health professions have also risen, although at a less rapid rate than post-secondary education as a whole. Table VII and Figure VI illustrate this, but is should be noted that it only records enrolments in « Medical Sciences », i.e. medicine, dentistry and pharmacy. In these fields, it may be assumed that the proportion of **investment** in education is proportionally higher than the enrolments, and may indeed be

TABLE VII. PROPORTION OF MEDICAL SCIENCES STUDENTS ENROLLED IN UNIVERSITY LEVEL HIGHER EDUCATION IN OECD MEMBER COUNTRIES, 1960 and 1970

As a percentage of total enrolments

	1959-60	1969-70	
Austria	12.0	14.2	
Belgium	25.9	24.7	
Canada	8.3	5.8	
Denmark	25.7	18.4	
Finland	7.8	5.1	
France	21.1	22.3	
Greece	16.1	16.5	
Ireland	18.2	16.1	(1967-68)
Italy	13.1	11.9	
Japan	4.9	3.8	
Netherlands	17.7	14.2	(1970-71)
Norway	12.3	7.9	
Portugal	17.7	15.6	
Spain	31.9	19.2	
Sweden	14.3	7.7	
Switzerland	18.2	18.4	(1970-71)
Turkey	11.8	21.9	(1970-71)
United Kingdom[1]	14.8	9.9	
United States	6.1	4.4	

1. Only refers to full-time university students ; whereas the OECD Classification of Education Systems includes certain categories of further education and teachers' training as university level higher education in the UK.

Source : Figures gathered from national statistical publications on education, according to OECD Classification Systems.

rising at a more rapid rate than investments in post-secondary education as a whole. This is primarily due to the fact that medical education entails relatively high unit costs. Thus, in the UK, recurrent costs per medical student per year are £2,400, contrasted with approximately £1,000 for the non-medical university student ; in the USA, average annual net educational costs for medical students are now about $10,000 (Institute of Medicine, 1974). From a composite viewpoint, it is significant that total expenditures for medical schools in the USA

Figure IV. EXPENDITURES ON HIGHER EDUCATION IN CERTAIN OECD MEMBER COUNTRIES AS A PERCENTAGE OF GNP AT CURRENT PRICES IN THE LAST DECADE

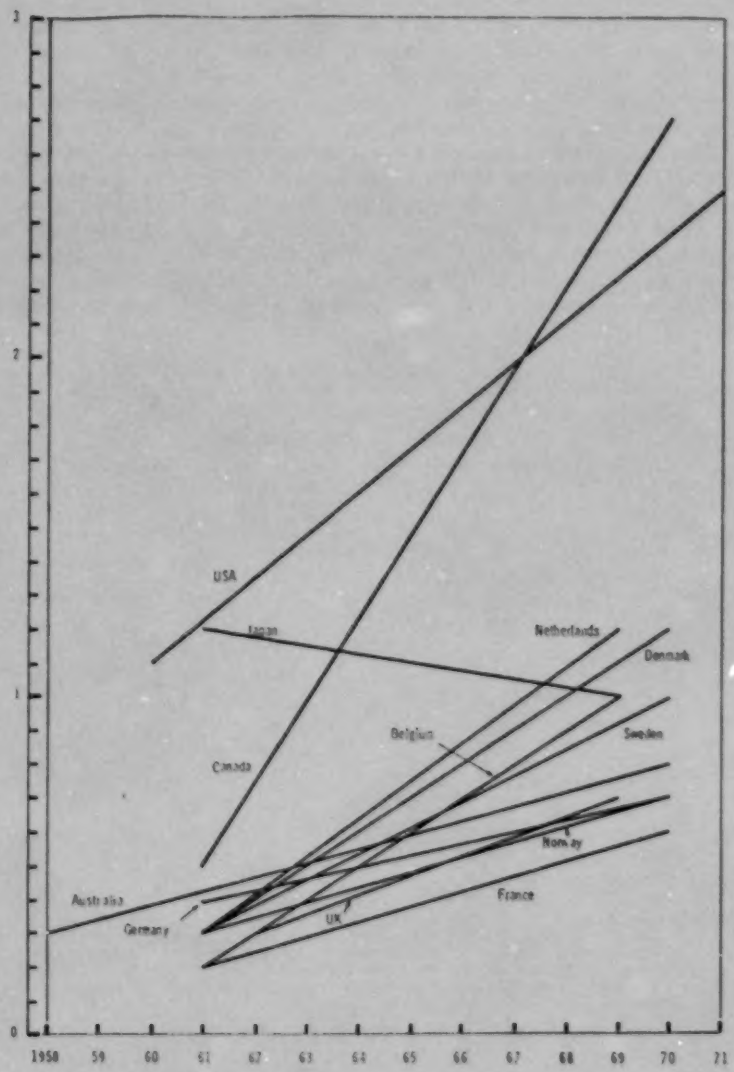


Figure V. GROWTH IN HIGHER EDUCATION ENROLMENTS IN OECD MEMBER COUNTRIES, 1960-1970
In thousands

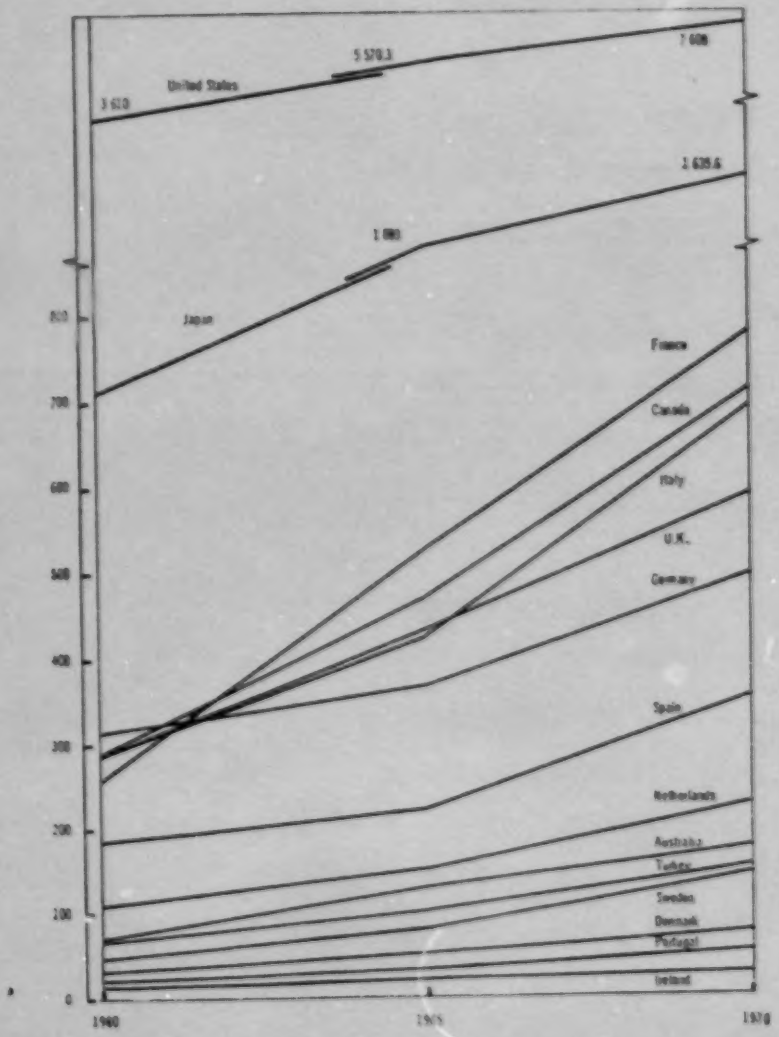
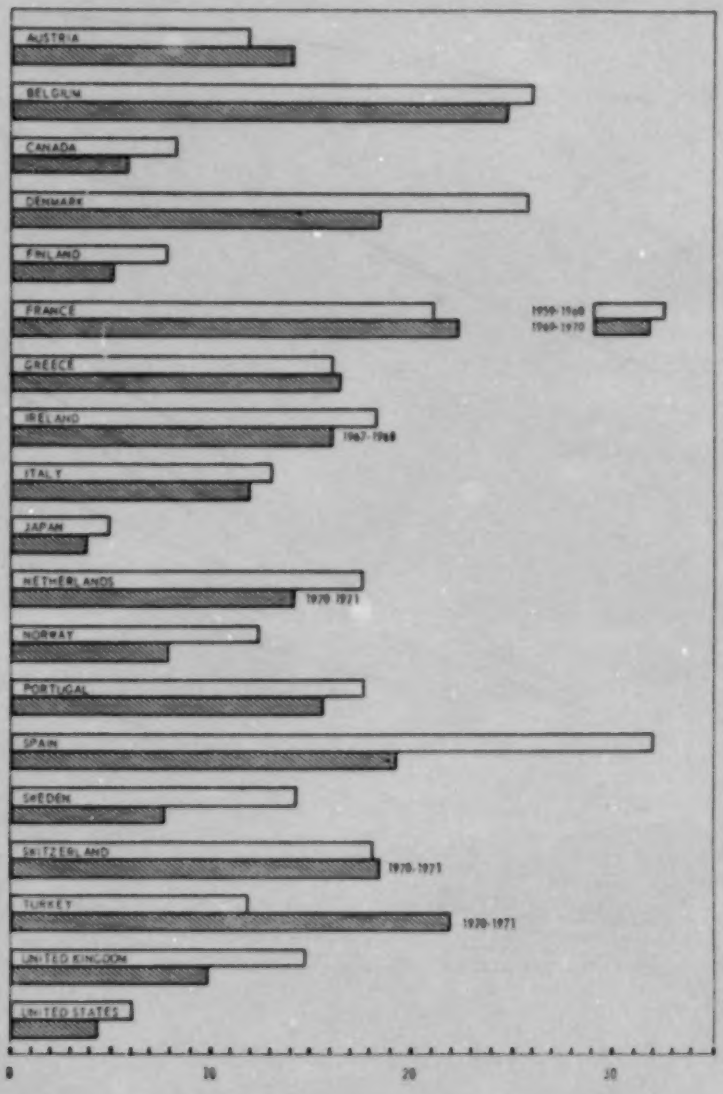


Figure VI. **PROPORTION OF MEDICAL SCIENCES STUDENTS ENROLLED IN UNIVERSITY LEVEL HIGHER EDUCATION IN OECD MEMBER COUNTRIES, 1960 and 1970**

As a percentage of total enrolments



rose from $80 million in 1947 to $350 million in 1959 and to $1,100 million in 1967 (Fein, 1971). It may be argued that such costs involve not only medical student instruction, but also research service, and teaching of other professional students ; on the other hand, it must be remembered that educational costs borne by health care service enterprises are frequently not reported. In any event, the national investments are impressive.

Just as with health care systems, it is necessary to examine the pattern for educating the health professions in more detail, if one is fully to appreciate the complexity of the enterprise and the forces controlling it.

The Nature of Education of the Health Professions

Certainly, some elements of education of the health professions vary widely from country to country, as Prywes (1973) has shown with respect to inputs to the system (e.g. admissions policies and entrance qualifications) as well as to outputs (e.g. the amount of further training required for independent practice).

A close look at historical developments, however, makes certain general trends visible. These explain some of the cleavages we shall examine later, while at the same time suggesting directions for more coordination in the future.

Between the mid-1800s and 1940 the education of physicians, dentists, nurses and pharmacists underwent a series of changes — from largely apprenticeship training to formalised instruction in organised faculties and schools, from a heavy bias towards skills to sequential curricula beginning with so-called basic sciences and terminating with clinical studies and the acquisition of professional skills.

In large measure, these developments followed a chronological pattern ; they tended to appear first in medical education, and later in dentistry, nursing and pharmacy. For the great majority of students in all the professions, they constituted the totality of professional education, and graduates were thereupon qualified for independent practice as physicians, dentists, nurses or pharmacists.

After the 1930s it became increasingly necessary to prepare students for specialised roles within professions. Today, for example, 41 medical specialties (including general practice) are recognised in Sweden ; nurses must be specially prepared for medical, surgical, pediatric, community or psychiatric nursing ; dentists may concentrate on operative dentistry, periodontia, orthodontia, pedodontia, or prostheses ; pharmacists may specialise in community, institutional or industrial work. Meanwhile, other professions such as physiotherapy and occupational therapy have been moving through the basis science/clinical sequence earlier experienced by medicine.

An immediate consequence of this move to specialisation was a reformulation of the objectives of professional education. Most clearly discernable in medicine, these new objectives recognised the need to provide an initial general basic education directed towards sound reasoning, the use of scientific methods specifically designed for biological problems, the development of insight into the organisation of biological systems and their interaction with the environment, and not least « learning to learn » in laboratory and clinical situations. Following this period of general basic education came professional training to provide the particular knowledge and skills necessary for practice in the various growing specialty areas.

Finally, we can now see the beginning of a further change, as a result of an enlargement of the concept of « basic sciences » for the period of general basic education. Just as health care is becoming more engaged in community problems of a socio-medical sort, more unified concepts of human biology point the way to a broader definition of « basic sciences » : a concept not limited to traditional disciplines such as physiology and anatomy, but embracing social and

behavioural disciplines such as psychology, economics, sociology, ethology, and linguistics. While this development is now only in its early stages in general medical education, it would seem to be the forerunner of a wider common scientific base for the initial general education of all the health professions — a grounding on which later professional training can be built.

The Structure of Education of the Health Professions

Over the last 100 years, specific educational programmes have evolved for each of the major health professions : medicine, dentistry, pharmacy, nursing, occupational therapy, physical therapy, optometry, medical technology, and so on. These programmes, for the most part, have been conducted in individual, frequently autonomous schools or colleges. The ways in which they relate to each other and the rest of the post-secondary educational system, however, is influenced to a considerable extent by the overall structure of post-secondary education. Thus,

— in most European countries, education in medicine, dentistry, and pharmacy is administered as part of the university sector ; education in nursing, physiotherapy, technology, midwifery and other health professions and occupations is administered in the non-university sector ;

— in situations like those in the USA, post-secondary education is not so divided by the university/non-university distinction ; schools for medicine, dentistry, pharmacy, nursing, and the whole range of health professions and occupations may be found within universities, or as separate, independently-operated institutions.

There are a number of arguments favouring a coordinated approach to planning and carrying out the education of the full range of health professions. These include a comprehensive approach to health manpower needs, cost-savings resulting from shared faculty and facilities, and better qualitative preparation of future professionals (a subject to which we will return in more detail in Section 4). In consequence, a number of approaches are being utilised :

— at planning levels, a number of European Ministries of Education, and Federal and Provincial or State education authorities in Canada and the USA, have established central coordinating and planning offices ;

— at operational level, there is a movement toward unified administration for education of the health professions within institutions. This movement is far more advanced in Canada and the USA (which have scores of multiprofessional « Health Science Centres ») than in Europe (where multiprofessional approaches such as those in Ulm, Germany, Tromsö, Norway, and Kuopio, Finland are distinct exceptions to the rule).

It must be emphasised that these approaches to coordination are far from fully developed. Many professional schools, for example, are not yet connected with Health Science Centres, and attempts to bring them into networks (as in the regional Health Science Complexes of Ontario (Charron, 1975) are only beginning. The university/non-university cleavage in Europe makes coordination and interaction particularly difficult. Nor is « coordination and unification » a panacea. Planning is frequently impaired by the absence of data and by preoccupation with medicine to the neglect of the other professions. Many Health Science Centres, while providing an administrative assemblage of 5-8 professional programmes, are not genuinely sharing faculty, facilities, or curricula. Both kinds of efforts are important elements for progress, however, and they are developing.

A final caution is necessary in respect of educational structure : institutional and faculty autonomy. Particularly in medicine and dentistry, and to a lesser extent in university-based schools of nursing, pharmacy and allied health professions in Canada and the USA, traditions have vested control over the selection of students, standards and curricula in faculty senates and similar bodies. This type of control frequently runs counter to coordinating efforts, and new methods of shared responsibility for governance are required if coordination is to advance.

The Location of Education of the Health Professions

Education for the health professions always entails both conceptual and practical learning experiences [1].

Everywhere, the need for practical learning experiences has made it necessary for professional schools to conduct large portions of their educational programmes in health care settings.

During the first half of the present century, the dynamic progress of bioscientific medicine, coupled with practice in the leading educational institutions, created an almost universal fixation on the hospital as the place for these practical learning experiences. For those educational institutions with the necessary power and prestige, however, the hospital of choice came to be the « University Teaching Hospital ». By the 1950s the mould was cast : the ideal for medical schools, and for as many other professional schools as possible, was to conduct programmes in a large, well equipped, university hospital — a regional or national referral centre dealing with the most complicated and difficult illnesses by means of the most advanced (and inevitably most elaborate and expensive) treatments. Professional schools of more humble status aspired to conduct programmes in hospitals as nearly like the ideal as possible. The education-hospital linkage came to be an automatic and embracing assumption ; even today one hears planners for new professional education programmes heatedly discussing « which hospital shall we join ? »

But it was not only the educators and the hospitals that agreed to this intimate union. It required the concurrence of education and health authorities as well, because the very process of teaching professional students in a hospital :

i) demands extra physical facilities such as classrooms and laboratories ;
ii) involves faculty members in service, and service personnel in teaching;
iii) makes the hospitals services slower and more costly.

In the period prior to 1960, therefore, a variety of mechanisms were put into effect to facilitate the union : educational budgets came to bear part of the costs of university teaching hospitals ; portions of faculty salaries came to be paid in accordance with their service responsibilities ; educational facilities were built in hospitals, and certain hospital functions were performed in educational institutions. The forms taken by these mechanisms differed. Several variants were a follows :

1. The total budgets for university hospitals were included in national education budgets.
2. Capital and operational budgets were shared by Ministries of Health and Ministries of Education.

1. For purposes of this report, the term " education " is an inclusive one, i.e. it includes the entire sequence from the time of entry into an educational programme until all the knowledge and skill necessary to perform a professional role has been acquired. The distinctions between " general education ", " basic professional education " and " training " are valid, and we believe that the sequence of preparation should include all three. We use this assumption in our use of the term " education ".

3. Educational budgets provided a percentage of faculty salary, with the remainder derived from service budgets or from fee-for-service payments.

All of these mechanisms took decades to evolve, and they have remained deeply rooted in the educational patterns of the 1960s and 1970s. They certainly achieve their original objective in enhancing education/hospital linkages ; but they make it extremely difficult for educational institutions to provide students with practical learning experiences in non-hospital situations. These difficulties spring from the facts that :

a) The almost total education/hospital linkages have created clinical faculties which are superspecialised, in accordance with the needs of regional or national hospitals. Such faculties are ill-equipped to work in other settings and disinclined to alter curricula in such a direction for reasons of professional preference and financial reward.

b) Non-hospital settings (general practice offices, community clinics, etc.) have not developed the sorts of educational facilities, reimbursement mechanisms, and organisational capacities which are necessary for the provision of learning experiences in those settings.

As a result, the redeployment of educational efforts to afford practical experience along the whole spectrum of health care faces many obstacles. In the absence of such redeployment, education of the health professions is preponderantly located in highly specialised hospitals. The educational consequences have been succinctly described by Stewart (1972) : « The educational system for the health professionals is principally geared to satisfying the special requirements of running complex institutions. The manpower needed to meet the general requirements of the population for health services is almost a by-product ».

Student Selection

In almost all OECD Member countries, the admission of students to Schools of Medicine is limited. A few countries maintain open admissions to all qualified secondary school leavers, but most of them have found that either :

i) subsequent limitation after 1 or 2 years is necessary, or

ii) that faculties and facilities are excessively burdened.

In those countries with limited admission to medicine, there are frequently 4-5 applicants per available opening (as in Sweden and the USA). The reasons for this pressure are obvious : the lure of medicine as a source of personal satisfaction and social status, and its very real financial rewards (Fein, 1971).

In other health professions, however, the picture is a different one. Dentistry varies from country to country in status and rewards ; nursing and pharmacy are at a distinct disadvantage in those respects ; and professions like optometry, physical therapy, occupational therapy and midwifery are not only at a competitive disadvantage, but are not nearly as well recognised and understood by potential applicants.

The consequences of these disparities may be seen in unfilled educational places in many of the less known and less remunerative professions, coupled (paradoxically) with excessive enrolments in pharmacy and other fields which tend to serve as second choices for applicants unsuccessful in their pursuit of medicine and dentistry. The unfortunate results these dislocations impose on health care systems is obvious, and a number of countries (France, Sweden, UK, USA) use a variety of career guidance techniques to correct them. A more appropriate educational balance of enrolments, however, is difficult to achieve

when educational coordination is poor, and when medicine and dentistry offer such tangible career advantages.

Apart from the important quantitative questions surrounding selection of students, there is a series of perplexing qualitative issues. In most OECD countries, for example,

— women and lower income groups are highly under-represented in the application pool for, and admissions to, medical and dental Schools ;
— in medicine and dentistry particularly, selection of students tends to be made on the basis of prior achievement at school, particularly in the natural sciences and mathematics.

These qualitative problems are troubling. The distribution pattern of enrolments by sex and class may well tend to make professional roles inflexible and interfere with the proper geographic and social distribution of health care ; without doubt, it seems contrary to national policies of educational equality. Whether the heavy selection emphasis on academic achievement in science tends to favour the formation of student bodies biased toward scientifically-oriented hospital work and against community health care is another issue worthy of examination.

It is beyond our mandate to explore the subject of student selection in depth. It is apparent, however, that it is an area of contradiction and uncertainty. Since some of its vagaries have serious consequences for the workings of health care systems, as well as for social policy, it would seem to deserve a specific investigation on its own.

Summary

Despite the manifest impact education of the health professions has on the size, nature, and effectiveness of health care systems, most educational authorities have only rudimentary mechanisms for planning it. Educational systems seldom deal with programmes for the health professions as an ensemble. At system-wide and institutional level, educational efforts are characterised by uncoordinated curricula and disproportionate output into various professional fields. These shortcomings are further compounded by firmly rooted education/hospital linkages, and by the autonomous control of curricula by university-based faculty. In point of fact, most current educational programmes are hospital-based, and oriented toward the preparation of students for specialised activities in relation to the rarer and more complicated illnesses. As we shall see in Section 3, this orientation poses serious problems to health care systems attempting to improve their service to the public at large.

Education and Health Care as Parts of the Service Sector

In the last 100 years the structure of society in the developed nations has undergone a radical shift — from rural to urban, from agricultural to industrial to post-industrial. In effect, the incredible increases in productivity that have developed successively in agriculture and industry have provided societies with the means for improving social and individual well-being to an extent never before possible. The change in the direction of society's efforts can be seen dramatically in Table VIII and Figure VII : personnel in the « service sector » — that is, education, health care, communicatiins, transportation, social services, social welfare — now amounts to approximately 50 per cent of the total labour force of many countries.

Figure VII. RISE OF SCIENCE SECTORS IN CERTAIN OECD MEMBER COUNTRIES, AS COMPARED WITH THE TOTAL LABOUR FORCE
1960-1970

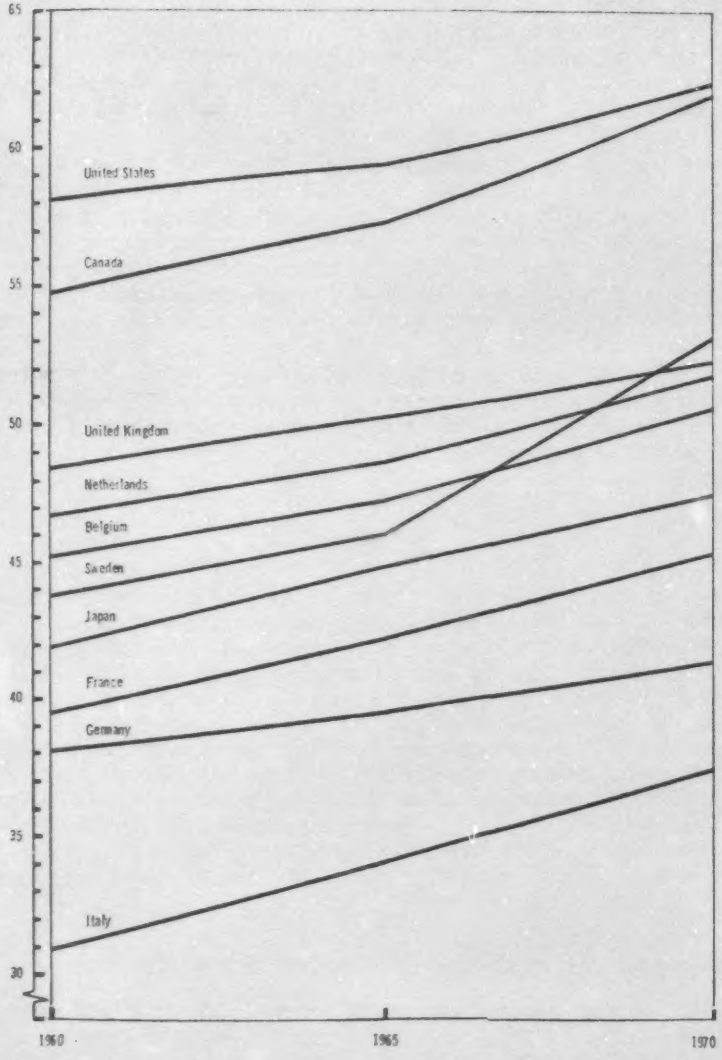


TABLE VIII. RISE OF SERVICE SECTOR[1] IN CERTAIN OECD MEMBER COUNTRIES, 1960-70

As compared with the total labour force

In percentage.

	1970	1965	1960
Belgium	45.2	47.3	50.6
Canada	54.7	57.3	62.0
France	39.5	42.2	45.3
Germany	38.1	39.5	41.4
Italy	30.9	34.0	37.5
Japan	41.9	44.8	47.5
Netherlands	46.7	48.7	51.8
Sweden	43.8	46.1	53.1
United Kingdom	48.5	50.3	52.3
United States	58.1	59.5	62.3

1. Service sector defined according to the United Stations International Standard Classification of all Economic Activities and includes transport, communication, health, education, public utilities, trade, finance, public administration, private household and miscellaneous services.

Source : U.S. Department of Labour, "Comparing Employment Shifts in Ten Industrialised Countries". (Author : Sorrentino, Constance).

What is of special significance is the fact that all parts of this service sector share most of the same characteristics that pertain to health care and education of the health professions. Typically, they are :

i) labour intensive, with an especially strong demand of highly qualified manpower ;

ii) increasingly supported by government funding either directly or through subsidies (OECD, 1972) ;

iii) rapidly growing, both in costs and size of labour force ;

iv) subject to over-increasing consumer utilisation, in which demand rises to meet supply ;

v) without the economic controls of the open market, as a result of government support and/or insurance programmes ;

vi) regarded increasingly by both individuals and governments as « collective services » or « rights » to which all are entitled ;

vii) increasingly institutionalised, in response to growing size as well as to technological complexity ;

viii) experiencing difficulty in determining the proper nature of the service to be provided, with a general public uneasiness about policies developed by professions, and a concomitant public demand for participation in policy-making.

Skyrocketing expenditures, therefore, are not unique to health — they are mirrored in other parts of the service sector, and they are due to many of the same factors (De Witt, 1973 ; Hodoly, 1973).

We find an unsatisfactory polarization of viewpoints, however, in relation to this situation. On the one hand, workers **within** the field of health too often seem ignorant of the fact that some of the forces producing rising health costs and the like are general societal forces. Their actions and recommendations are in consequence parochial, e.g. establishing manpower projections for health which would entail curtailment of manpower in other parts of the service sector (Rosenbaum, 1971), or recommending control patterns in health that could not be effected except as part of much broader social measures.

On the other hand, macro-economists, while they have a better overview of the picture, sometimes tend to be too global. Some seem so preoccupied with the search for general mechanisms that might bring order to the service sector that they tend to overlook qualitative differences between parts of it. Others depreciate the real (though small) progress that might be made in a part of the system as a useful step toward a more general solution.

In the face of this tendency to polarization, we are strenuously of the belief that a sound union of both macro-economic and intra-professional viewpoints can only come about by a joint recognition of the need for qualitative changes in the system. In respect of health care, as with other parts of the service sector, there is a public demand for qualitative change. The Council of the OECD, for example, has concluded that there is a need for a thorough examination of the quality of life, and has agreed on a number of national social concerns — health, individual development through learning, employment and quality of working life, time and leisure, command over goods and services, physical environment, personal safety and the administration of justice (OECD, List of Social Concerns, 1973). Specific sub-problems have been identified, and the Organisation's Division of Social Affairs is now examining possible indicators for determining how well these are being solved.

What is important, in our view, is the fact that examinations such as these will call for changes in the nature of what the service sector produces, the manner in which it produces it, and the way in which the decisions are made. In the case of health care and education of the health professions, the remainder of this Report will amplify this view. While we believe a good deal of progress can come about as a result of such activities in our field of concern, however, the full benefits can only be attained by similar progress in other parts of the service sector — progress which would allow for an analysis of personnel functions **across** rather than **within** professional boundaries.

SUMMARY

Both health care systems and systems for educating the health professions are impressive in their size, complexity, and costs. They are jointly responsible for providing society with a vital service, a task which can only be properly accomplished by joint action within the context of overall social trends. But « joint action » is no simple matter for systems involving millions of personnel entrenched in established and sometimes conflicting patterns of activity. It depends on the identification of objectives for the systems as a whole, and on subsequent development of realistic mechanisms for reaching those objectives. Only within such a comprehensive approach can the problems of imbalances and lack of coordination be handled. It is to these issues — the identification of objectives and mechanisms — that we now turn.

Section 2

THE PRESSURES : NEW DEMANDS UPON HEALTH CARE SYSTEMS

A delicate sense of balance is necessary in describing the pressures now being exerted on health care systems. There are indeed demands for change and improvement, arising from many quarters. In our view, the bulk of these demands are aimed at improving and expanding a service which is almost universally regarded as valuable and essential.

Unfortunately, a small but significant part of the debate on changing health care veers toward the polemic. Intemperate critics of the present systems focus on deficiencies or abuses without proposing constructive alternatives, and equally intemperate defenders claim that any change will bring disaster.

We do not subscribe to either of these extreme views. In our view, the elaborate health care systems of the OECD Member countries have achieved a remarkably successful record in eradicating some illnesses and treating others. Research, development and practice have extended the capacities of health care beyond what could have been anticipated even 50 years ago. The individual is protected against the killers of the 1800s — diphtheria, typhoid, pneumonia, enteritis — and has available far more effective means of treatment for heart attacks, accidents, and chronic illnesses. Life expectancy has been increased by 10 to 15 years, largely as a result of improved prenatal, maternity, and post-natal care. There is no question but that those excellent achievements have won public approval. Public support for health care expenditures is elegant testimony to the high regard in which health care is held.

We believe, however, that most current health care systems are in need of change, and indeed that they are in the process of changing. What seems to be required is a realignment that will secure the gains of the past century and promote progress on the problems of today — more equality of access, more attention to socio-medical problems, more prevention and health promotion.

We believe we perceive these aims in most of the calls that are being made on health care systems throughout the developed nations. These place varying emphasis on one or another objective ; generally, however, they are concerned with four issues : access, quality, costs, and extension.

A. Access to health care services

If there is any single demand on health care systems that triggers off responses in every quarter, it is the demand for access to the system, and access through the system to whatever special resources are necessary for proper individual treatment.

It is not difficult to understand the origin of this widespread concern. The individual in distress wants help to be close, quick and complete. Difficulties in access are sore points indeed, and there is nothing intangible about how they manifest themselves : a three-hour queue or a 200 mile trip are very personal experiences.

Unfortunately, there are many problems in providing « ideal » access. A certain amount of delay and difficulty inevitably results from seasonal fluctuations in illness rates, geography, and relative shortages in relation to low priority programmes. An individual's perception of « inaccessibility », moreover, may be more determined by questions of convenience than by a genuine impact on health or proper health care.

Nevertheless, there seems to be virtually unanimous agreement that present health care systems fall far short of « ideal » access. The principal difficulties lie in three broad areas : time and distance, warped distribution of resources, and disunity of resources.

Time and Distance

How much time must be spent by a patient between the moment when he recognises the need for help, and the moment when he comes into contact with the health care system ?

To a certain extent, the answer depends on distance — the sparsely populated areas of northern Canada, central Australia, and northern Scandinavia, for example, present more difficult problems in this respect than do Paris, London, or Stockholm. Other elements than distance, however, are involved. The urban clinic or doctor's office may be only a few steps away from the patient's home, but the waiting period may vary from minutes to weeks.

An optimal way of approaching this problem seems to lie in fusing the time and distance factors of access. Swedish health authorities, for example, have attempted to establish maximum time limits for :

i) first meaningful contact,
ii) general treatment, and
iii) specialised treatment,

with mechanisms specifically designed for urban and rural areas. In sparsely populated areas, for example, the telephone or radio may have to serve as the first meaningful contacts, and air transportation may be necessary to bring about general and specialised treatments within the time limits. Much the same approach is taken by NATO experiments dealing with new modes of emergency care and ambulance transportation for civilian health care (Egeberg, 1972). All facilities cannot be everywhere — contact and rapid transportation become critical issues.

Warped Distribution of Resources

But efforts aimed at speeding access to health resources can only be partially successful when the resources themselves are inappropriately distributed. Too often, such efforts are confronted with insuperable shortages of personnel and facilities. There are two types of situations in which shortages commonly appear :

i) sparsely populated (and frequently poor) rural areas, and
ii) densely populated (and almost always poor) urban areas.

Thus, hospital beds are in short supply in northeastern Paris, but abound in southwestern Paris (Cahiers, 1972) ; physicians, dentists and nurses are far scarcer in Alabama than in New York (USPHS, 1970).

Growing public and professional clamour on this issue is apparent. Several national and local governments have designated geographic shortage areas, and offer financial incentive to health professionals willing to serve in them. In a number of countries, obligatory periods of service in such areas, in return for

educational subsidies or in response to financial inducements, are being considered (Duval, 1973). Rigorous government control over hospital instruction and location is being pursued in almost all countries.

Disunity of resources

The problem of access would not necessarily be resolved, however, even if one could overnight achieve a miraculously equitable distribution of personnel and resources. There would still be the matter of access **within** the health care system. How to be sure that the « gatekeeper » (the professional who must decide on questions of treatment, return to home, admission to hospital, transfer to other facilities, etc.) at the point of primary contact knows what the patient needs, knows where that resource is located in the system, and has the capacity to make it available to the patient, is a very difficult issue (Nagi, 1973). Centrally organised systems such as the UK's National Health Service and the Swedish health system can assure system-wide access better than can the less organised systems — but in all systems, the role of the « gatekeeper » remains something of an enigma.

B. Quality of Health Care Services

In the light of the acclaim that greets such medical spectaculars as heart transplants, it might seem to some that the quality of medical care is not in question. Indeed, at advanced technical levels, the quality of care is very high.

The problems are there, however, and are attracting increasing attention :

— higher death rates in poorly-used resources, as revealed by Somer's (1967) study of heart surgery units ;

— incomprehensible variations in treatment of identical illnesses, depending on the hospital giving the treatment (Pearson et al, 1968 ; Smedby, 1972) or the patient's socio-economic background (Lave, 1972) ;

— questionable benefits of much-heralded innovations like coronary care units (Mather, 1971) ;

— dramatic geographical, racial, and socio-economic variations in such vital statistics as mortality rates of newborn infants (USPHS, 1968 ; Edwards 1972 ; UKDHSS, 1972) ;

— large amounts of unrecognised and untreated illness identified in the course of surveys (Navarro, 1971) ;

— growing uncertainty about whether health personnel are keeping abreast of technologic and scientific advances (Carmichael, 1972).

In response to these problems, one sees a growing pressure toward :

— the development of monitoring mechanisms, of which treatment reviews conducted by the French Social Security system, and the much-debated Professional Standards Review Organisations of the US are but two examples ;

— expanded systems for periodic reeducation of professionals, with increasing consideration of periodic reexamination and relicensure ;

— new methods of screening and prevention ;

— a major redistribution of health resources to provide improved health care to disadvantaged populations.

Less easily circumscribed is growing professional and public concern about the « disease orientation » of medical personnel, with a general desire for the development of a more « personal orientation ». Dissatisfaction on this score is

frequently couched in vehement and pejorative terms, but is buttressed by studies which indicate :

a) insufficient professional attention to the psychological and social elements of illness and treatment, and
b) the therapeutic efficacy of good relationships between patients and medical staff (Skipper, 1968).

C. Costs of Health Care and Cost Control

As indicated in Section 1, the costs of health care are rising in response to a number of pressures : advances in treatment repertoires, higher salaries, and increasing consumer demand, among others.

Concern over these costs has been growing throughout the past two decades. Its locus, however, has shifted. The expanded participation of government and insurance schemes has lessened concern about individual costs, and directed attention to the taxation which results from government participation.

Pressure for cost control, therefore, is increasingly an issue for government policy makers and administrators, who must resolve the question of controlling costs while simultaneously dealing with ever-expanding demands for services. The call is for more cost-effective means of health care delivery, without sacrifice (and hopefully with improvement) of quality.

D. Extension of Health Care

The first three types of demands on health care systems are largely centred on the treatment of acute illness. Increasingly, however, there is both professional and public pressure for expanding health care activity in two other directions : « health promotion » and the socio-medical field. The pressure for these extensions is marked, albeit the methods whereby they can be achieved are still unclear.

" *Health Promotion* "

« Health promotion » involves adding a new orientation to health care, which has heretofore been mainly concerned with the prevention and treatment of illness. The new orientation would be broader in the sense that it would be concerned with the « optimisation of health » (Rogers, 1973) : providing citizens with the knowledge and the means to achieve greater levels of physical, mental and social effectiveness and satisfaction ; helping them to modify their « life styles » — habits, exercise patterns, diets, and handling of alcohol, tobacco and drugs — in ways conducive to improved health.

It is not difficult to see some of the concrete ramifications of this demand. In some respects, it represents an extension of previous patterns of prevention. It will certainly involve such approaches as genetic counselling, changes in dietary and housing conditions, integrated social prevention of accidents, environmental control, and health screening. The methods for carrying out these approaches, however, are not known ; none of them fall exclusively within the province or competence of present-day health care systems. New partnerships with other social services will be essential.

Expanded Socio-medical Efforts

There are also emphatic demands upon health care systems to improve and expand their involvement in a wide range of socio-medical problems : care of the

elderly and chronically ill ; rehabilitation of the disabled ; care of the mentally retarded ; prevention and treatment of drug abuse and alcoholism (Pour une politique de la santé, 1971 ; McKeown, 1965 ; Rogers, 1973 ; Poniatowski, 1973).

Here again, the methods of approach to the problem are still uncertain. While teams of health professionals may provide good « medical care » to the elderly, for example, a proper programme for the elderly is far beyond the capacity of the health professionals alone ; total care must of necessity involve coordinated efforts with welfare, housing, education, and transportation authorities. But in addition, issues such as prolongation of life must involve a clarification of social values and norms ; the maintenance of individual abilities, productivity, and satisfaction of elderly people are linked less to the « medical care » than to diet, work opportunities, and the status of the elderly in society (Leaf, 1973 ; Morison, 1973). Once again, new partnerships for health professionals seem essential.

The Views of Consumers, Professionals, and Government Officials

It is evident that the four types of demands thrust upon health care systems — access, quality, cost control and extension — are concerns of individual citizens, professionals and government officials.

But the viewpoints held by the different groups are not always identical, and are sometimes in conflict. To the mother of a feverish child, for example, « access » may mean a house call by a physician at 2.00 a.m. ; to the professional, it may mean a community mental health clinic or drug treatment centre manned by a nurse 24 hours per day ; to a government official, it may mean the construction of a regional network of hospitals. It is well, therefore, to be aware of these cross-currents, and to recognise the burdens they impose on the managers of health care systems.

Consumers

Individually, citizens are most concerned about those items that affect them in a personal fashion : ease of access to health care, the personal quality and comfort of the care they receive, the dignity and fairness with which they are treated, the amount of information and guidance which they receive, and the observable results of treatment. There is dismay at delays, queues, arbitrary and impersonal treatment, « being shunted around », being kept in ignorance — a dismay reflected in the use of private practitioners in preference to public clinics in a number of countries.

To a large extent the individual's view of health care is inevitably limited to this personal and non-expert viewpoint. He has not the knowledge to gauge the medical quality of the care he receives, he lacks the time and the opportunity to examine in detail the workings of massive health care systems. Increasingly, therefore, a concerned citizenry is seeking some objective mechanism for insuring that all is well on the professional and management side of health care.

To a certain extent such assurance can be provided by monitoring by professional groups (as in the instance of required periodic re-education and re-examination of professionals). Government surveillance and government reports serve a similar end. But none of these devices is entirely satisfactory at this time. There seems to be a degree of doubt that reports of professional societies and government are sufficient — they are remote, and they are concerned with the policies already in effect.

As a result, there is a growing movement toward organised and direct consumer participation in health care decision-making at every level. It involves

not only decisions about policies and programmes (Fourth World Conference on Medical Education, 1972 ; WHO Public Health Paper 55, 1974) but also mechanisms for health care delivery (Evans, 1971) and clinical decision-making at the level of individual hospitals and clinics (Pellegrino, 1973). A number of countries have institutionalised consumer participation in different ways : a network of advisory bodies in Ontario, Canada (Charron, 1975) ; public representation at every level of health service management (UK White Paper, 1972) ; traditional patterns of multi-level political interactions in Sweden (Tengstam, 1975).

Professionals

The voices of professionals in respect of health services are a confusing and contradictory chorus. There are, of course, dispassionate and comprehensive analyses by professionals. Examples of these may be found in works like McKeown's (1965) presentation of the need for expanded efforts for the aged and chronically ill, and the Carnegie Commission's (1970) broad recommendations dealing with access, orientation of patient care, manpower preparation and reeducation in the USA.

Many valuable professional analyses, however, are more limited in their scope, as in the case of Child's (1973) concern with an excess of surgeons in the United States. Some are clearly instances of pleading a special (albeit worthy) cause, as in the instance of family practitioners advocating special hospitals for family practice (Magd, 1973), and the almost interminable series of pleas for more resources for special causes (research on cancer, clinics for family planning, and so on). To the citizen, such a mélange of conflicting pleas (all supported with fervour by professional personnel) can only add to the questioning about the ways in which the health care system is being run.

Finally, it must be recognised that the manner in which a health care system runs has personal as well as professional significance for health personnel, changes in access, quality and cost can effect their working conditions, their incomes, their social status, their security. In consequence, recognition of the undoubted value of professional advice regarding change is balanced by varying degrees of scepticism about the degree to which that advice serves the public or the profession (Schwartz, 1972 ; Heidenheimer, 1972 ; Paully, 1973 ; Lindsay, 1973). There is a need to balance a full expression of professional opinion with adequate consumer participation in the formulation of health policies and the control of health practices.

Government Officials

It is plain that government officials are caught in a number of power cross-currents when they confront the issue of health care. Three demands — access, quality and extension — are undeniably desired by the public. They almost inevitably call for more government spending, however — and the « citizen's revolt » against higher taxes is everywhere. Moreover, there is little guarantee that added resources will produce tangible positive results ; too many vigorous programmes have wound up in trouble to allow for overconfidence.

What government officials are increasingly seeking, therefore, is evidence upon which to base their programme decisions. This search has led them to seek help in several directions :

— improved information systems, for better understanding and management of health care. There are too many obscure areas in health care — definitions of role, functions actually performed at professional visits, etc. Concerted efforts are being made, therefore, to develop more flexible, refined and comprehensive systems of information (Harö, 1972);

— scientifically conducted surveys of health and illness, to get more accurate estimates of real needs for various kinds of facilities and manpower. This has been done in different regions and at different socio-economic levels ;
— evidence from research and development programmes which help to predict the efficacy of projected programmes (US Office of Science and Technology, 1972). Such programmes increasingly use such techniques as multidisciplinary evaluation, systems analysis, and « social experiments » which « test » a proposed innovation on large population groups;
— evidence that health care proposals will not only do what is expected of them, but that they will do so more effectively than alternative proposals — for example in traffic control, environmental improvement, better working and living conditions.

In pursuit of this question, extensive searches are now being made for more refined health indicators with special emphasis on broad social (rather than narrowly biomedical) determinants of health.

In short, government officials share the common desire for improvement, but want to be sure that any programmes they launch will produce what is desired by citizens, and do so within manageable cost limits.

SUMMARY

There are sound grounds for believing that health care systems are in the first stages of profound change, stimulated by the pressures for better « classical » services, but at the same time for « new » qualities for service : more personalisation, more consumer participation in decision-making, more involvement in social-medical areas.

But this new movement faces two obvious difficulties : uncertainty and financial problems. Exactly what will satisfy both public and professional standards is far from clear at this point, although the general aims — access, quality, cost control, and extension — are well recognised. Since many proposed measures call for additional resources (at the expense of alternative and sometimes clearer national priorities), there is an understandable hesitancy on the part of government officials to launch new programmes without evidence that they will reliably satisfy health needs in a cost-effective way.

It would seem, therefore, that the cross currents of demands on health care systems converge in calling for incremental rather than draconian change. Equally, they call for new partnerships in the process of change : new partnerships in decision-making ; new partnerships among health professionals, other disciplines, and other social agencies in execution. Only through such a step-by-step, participatory approach is it likely that common goals will be satisfactorily achieved.

Section 3

THE RESPONSE : NEW DIRECTIONS FOR HEALTH CARE SYSTEMS

In the face of the problems and challenges we have reviewed, national health care systems have shown a striking uniformity of response. On all sides, efforts are under way to meet the new demands at the community level by means of rejuvenated and broadly-oriented primary health care. In support of this movement, changes in administrative structures, new channels for consumer participation, and altered incentive-disincentive patterns of funding, are found.

This is not to say, of course, that the responses of national health care systems have been identical. Anyone familiar with the international scene recognises that differences abound. In fact, the responses have started at different times and along different fronts ; some reorganisations have moved in fits and starts, some have followed an orderly sequence. Most importantly, all have been grounded in the traditions, the societal structures and the political systems of the countries concerned.

This diversity makes it advisable to reemphasize the importance of centering attention on **functions** rather than **means**, as we explore the common elements that are woven through national responses. Forward planning, for example, has used different **means** in the United Kingdom (consultative documents followed by a government white paper, followed by an elaborate and open-ended re-education programme) than in Ontario, Canada (a citizen's advisory body, widespread examination of alternatives, a gradual evolution of consensus). In each system, however, certain **functions** were carried out : multi-level consultation and re-education, emerging agreement on priorities, regionalisation of management. As we progress through the analysis of responses of health care systems, therefore, we shall try to cut through the morass of various local and national definitions by focusing attention on common functions.

NEW HEALTH CARE POLICIES

We have attempted to analyse the policies which are guiding national health care systems by a number of approaches : examination of official positions, study of national or regional reports, and analysis of national situations by expert consultants.

It must be admitted at the outset that only a partial understanding of national health care policies can be derived from official reports and positions. In fact, comprehensive policy guidelines exist in only a few instances e.g. refined priorities and guidelines in Sweden (Tengstam, 1975), general objectives for the 1980s in France (Bonamour, 1969), and strategic positions in a series of documents in Australia and Ontario, Canada (Charron, 1975). For the most part, the public expressions of health care policy tend to be very general (e.g. the right of all citizens to health care) or to deal with part-priorities (e.g. crusades against cancer, or programmes to provide nursing homes for the elderly).

This is, we believe, a very serious problem in that it has a direct bearing on

education/health care interactions. It is not surprising that educational systems and health care systems are not attacking problems conjointly when clear guidelines in the form of policy statements are not available.

The fact is, of course, that policies do indeed exist, but they are more often implicit than explicit. They must be found by a careful scrutiny of the operating mechanisms of health care systems, e.g. the moves whereby, over a ten-year period, the UK National Health Service successfully promoted a new kind of general practice by a series of financial incentives, status rewards, and construction of clinics. Unfortunately, « quiet » moves of this sort, while evident to those who design them are much less evident to those who are influenced by them, and they can be very ambiguous as a base for a major reorientation of educational policies.

We have therefore had to draw heavily on detailed studies of national reports and management procedures, and to lean on the judgements of consultants familiar with national situations, to reach our assessment of health care policies now being pursued in OECD Member countries. The conclusions manifestly reflect our judgement ; they represent neither commitments nor obligations of governments or health authorities, unless specially noted as such.

It is our judgement that the health care policies of OECD Member countries are generally aimed at two complementary objectives : massive renovation and expansion of primary health care ; rigorous control and restriction of hospital/specialised health care. For an understanding of how these policies operate, it is best to consider the two objectives in sequence.

Policies Regarding Primary Health Care

We consider primary health care to be a functional concept directly related to individuals and families, involving :

- Access to the health care delivery system at times of trouble ; an effective, continually-available point of contact ;
- continuing contact with the system. Such continuing relationships include not only remedial treatment for intermittent acute illnesses, but health education, health surveillance, health screening, prevention, and rehabilitation ;
- supervision and management of the health aspects of chronic disabilities not requiring specialised hospital treatment, but requiring long-term treatment at home, or in facilities such as day care or residential centres for the mentally retarded, the mentally ill, the chronically ill, or the elderly ;
- Referral to other parts of the health care system for purposes including specialised diagnostic procedures, specialised consultation, and specialised treatment of complicated illnesses ;
- necessary liaison with other social agencies and services, in connection with the provision of help for patients and families whose problems require a common approach by health professions and personnel from welfare and housing authorities, rehabilitation services, social security, and other community resources.

The organisation of primary health care is complex. Basically, it is aimed at individualised continuing care in community settings such as professional offices and clinics. It extends, however, into those domiciliary facilities which provide long-term care of the sort not requiring hospitalisation for specialised diagnosis or treatment. Of necessity, it must have linkages :

a) with hospital/specialised health care, and
b) with personnel outside the health care system.

In connection with this definition, it is necessary immediately to confront some issues that can too easily create confusion in an international study.

Definition by Function and not by Certification or Location

The definition of « primary health care » includes a number of functions which may be performed, in different situations, by professional personnel with different credentials. To take several illustrative examples :

- normal prenatal and maternity care. This may be carried out by a midwife, a nurse-physician team, a general practitioner, or an obstetrician ;
- Minor surgery and treatment of uncomplicated fractures. This function is usually performed by physicians in general practice or surgical practice, but may sometimes be performed by nurse practitioners or other specially-training personnel ;
- routine eye examinations and prescription of corrective lenses. This function may be performed by ophthalmologists, optometrists, or other specially-trained personnel ;
- continued treatment of chronic conditions such as cardiac failure, diabetes, nutritional disorders, and congenital metabolic disturbances. Physicians, nurses, dieticians, physiotherapists, and social workers are but a few of the professionals who may have a key role to play in such functions.

It is important to note, therefore, that *each of these primary health care functions may, under certain circumstances be carried out by personnel from the hospital/specialised health care system.* Thus :

- a normal delivery may take place in a highly specialised hospital, and the professional functions may be carried out by an obstetrician-gynaecologist ;
- an ophthalmologist (who ordinarily specialises in the treatment of detached retinas) may perform a routine eye examination.

In these and other cases, we believe that the function is a primary health care function, irrespective of the certification of the individual who performs it, or the place where it is performed.

The Problem of Nomenclature

Among OECD nations, the functions we have described are recognised by a wide range of titles. Our rationale for using the term « primary health care » can best be understood by examining some of the more prominent alternative titles, and the principal reasons for which we eventually chose not to use them.

i) *" Primary care " and " Primary medical care "*

Both of these terms are in use, but both tend to be associated with the treatment of illness, and with the notion of a way-station on the road to « secondary and tertiary care ». We wish to emphasize *a*) the pursuit of health, and *b*) the fact that this type of health care is central, with hospital/specialised health care being a necessary auxiliary rather than the central determinant of the entire system.

ii) *" Community care " or " community medicine "*

These terms are sometimes used to describe the functions under review. Just as frequently, however, they are used in a narrower sense :

the application of community-wide public health measures such as sanitation, epidemiological studies, or environmental control. We believe that there is indeed a « community health » function of this type, but it does not include the continuing personal involvement with individuals and families that we ascribe to the function of « primary health care ». This same distinction has been made by a working party of the British Medical Association (1970).

iii) *" Family medicine "*

Usually, the functions ascribed to this term are similar to those we use. The connotation of « medicine », however, implies a disease orientation, and we wish to emphasise health promotion. Additionally, « medicine » implies that physicians perform the functions, whereas we have found that they are invariably dependent on such other professions as nursing, psychology, and social work.

iv) *" General practice "*

This term has in the past connoted, and often still connotes, a medical practitioner ; once more, our desire to emphasise multiple professional involvement in the function causes us to be dubious about using it. The determining reason for avoiding the term, however, was that it has entirely different connotations in different countries. In the UK, for example, it frequently (but not always) involves groups of general practitioners and other professionals, in a health maintenance role ; elsewhere, it implies solo practice by a physician. In yet other countries, primary health care functions are not uniquely delivered by « general practitioners » either solo or in groups, but also by teams of specialists : in Canada, Sweden, and the USA, for example, internists, paediatricians, and others frequently carry out a primary health care role.

v) *" Health maintenance organisations "*

This term, as used in the USA, is congruent with our overall interpretation of current policies in the health field. It describes a prepaid total system of health care extending from prevention through hospitalisation, with an operating emphasis on preventive and non-hospital services and on lower use of hospital/specialised health resources. It includes, therefore, both objectives we have found in many systems — promoting primary health care and controlling hospital/specialised health care — but does so in a way difficult to use in an international analysis.

The Special Need for Teams in Primary Health Care

A basic feature of primary health care is the fact that it invariably involves a team — a constellation of personnel which differs from country to country, but which universally has certain operational characteristics

National variations in the composition of primary health care teams are manifest. In respect to medical personnel alone, we have already noted that Canada, Sweden, and the USA engage specialists in primary health care, while the UK, the Netherlands, and Belgium engage general practitioners (although more and more of these tend to have « specialised interests » as larger groups of general practitioners come into being).

The other health professionals in primary health care teams also vary widely. Vivid illustrations can be found in reports such as those of the Council of Medical

Services of the American Medical Association (AMA, 1973), which describes 30 « community health programmes » ; the Fourth World Congress for Medical Education in 1973 ; and descriptions of primary health care as it functions in various parts of the world (Bowers, 1973 ; Querido, 1972 ; Murray, 1973 ; Bonamour, 1969 ; Roemer, 1969). One finds teams that include not only physicians but also « visiting nurses », « public health nurses », social workers, physicians' assistants, community aides, health visitors, volunteers (as in the « meals on wheels » programme in the UK), and nurses with special training in the management of diseases like diabetes (in Sweden).

In our view, this diversity of personnel for performing the functions of primary health care is probably advantageous at this moment of time. The fact is that we are not at this time certain of the most efficient « mixes » of professional personnel for primary health care, and a variety of approaches, if carefully examined in comparative studies, should provide better leads in the years to come.

There is also, however, a variation in the auspices under which various team members work and this variation must be viewed with considerably less favour. Thus, most health personnel are in government supported or directed services in the UK and Sweden, but are supported and directed by a large variety of public, private and religious agencies in the USA, the Netherlands, Belgium and France. Such a patchwork of auspices for performing primary health care places patients and families in the position of having to seek help from multiple sources. It creates difficulties for professional participants as well : they need to work as a « team » and in fact constitute a team, but they do not have common objectives, communication linkages, or common lines of authority. Finally, it poses a very serious problem to education of the health professions, because it makes it extremely difficult to provide students with a full set of experiences in primary health care.

The Special Characteristics of Primary Health Care

Irrespective of differences in primary health care teams, they have certain special characteristics that deserve careful attention.

It is necessary immediately to distinguish primary health care teams from the more easily-recognised « teams » that abound in hospitals, for example, in surgical operating rooms. To be sure, both types are multiprofessional : an operating room team will involve physicians, nurses, technicians, and a range of supporting personnel ; a primary health care team will involve physicians, nurses, psychologists, home visitors and secretariat staff, among others.

But there are marked dissimilarities between the two types of team as regards structure and function. The specialised hospital-based type is organised in a hierarchal, well-disciplined fashion, with clear delineation of responsibilities ; team members work together at a single point in time, with a single common objective ; the team controls the resources necessary to perform its mission.

The activities of a primary health care team, in contrast, are far less focused. The handling of a patient's problem may extend over months, and be carried out in different places by different team members. Nor can the team command all necessary resources : it may have to depend on the willingness of other social agencies, of landlords, of neighbours, or of volunteers, for vitally needed help.

In contrast to technically-oriented teams working in hospital/specialised health care, therefore, the primary health care team must handle problems of role changes (as one or another person assumes principal control of operations) and role diffusion (as a person in one profession must decide whether or not a given symptom or development warrants consultation with another team member). The team and each of its members must be skilled in enlisting participation and aid from other agencies.

In summary, the hierarchal and technologically-based team is not the model for the primary health care team. Members of such a team must be equipped for flexible and shifting interactions amongst themselves and others, must have a wide and working knowledge of each other's skills, must all be capable of independent activity, — and they must have all of these assets in addition to the skills and knowledge requisite for their individual professional role. This type of requirement calls for people with greater social science knowledge and skill and greater interdisciplinary and interprofessional understanding than has commonly developed in the course of health professional education (Institute of Medicine, 1972).

Policies in Action

Governments and professional leaders in country after country are promoting the sort of primary health care we have described. It is a central theme in the development of the « health science complexes » of Ontario (Charron, 1975) and the community service pattern of Sweden (Tengstam, 1975). It is advocated for the USA (Rogers, 1973 ; Kennedy, 1973 ; Auerbach, 1972). It is forecast for France (Bonamour, 1969) and may be seen in French arrangements which favour prevention, special preparation for general practice, group practice, and vigorous approaches to alcoholism (Poniatowski, 1973). It is inherent in the operational policies promoting general practice in the UK, which :

i) provide incentives for groups and team practices,
ii) maximize training opportunities for such practice, and
iii) insure a regionally coordinated network of hospital and community health care and other social services.

Nor is it difficult to see why primary health care is receiving so much support. The demands on health care systems, especially those involving personalisation, new types of prevention, and socio-medical programmes, cannot be satisfied without new partnerships and roles **within** health care, and **between** health care and other social service enterprises, at the individual and community level.

Policies Regarding Hospital/Specialised Health Care

We consider hospital/specialised health care to be those functions in health care systems that provide :

— specialised personnel and facilities for the diagnosis and treatment of complicated acute illnesses ;
— consultation services for patients referred by the primary health care system ;
— intramural treatment for patients who require specialised treatment such as major surgery or intensive medical therapy.

In this sense, « hospital/specialised health care » has undergone a remarkable transformation within the last century. As scientific and technologic advances accumulated, the quality and diversity of hospital treatments multiplied, and the need for economics of scale led to the large, complex establishments we see today.

Clearly, hospital/specialised health care will continue to play a prominent role in the health care systems of industrialised societies. But this role is limited; it is essentially disease-and treatment-centered, and it is also intermittent (being used only as required by the nature of a patient's illnesses).

The term « hospital/specialised health care » is used here in a general way. It includes such national variations as :

— differences in functional levels. In some countries, like Norway (Aisen, 1972), Sweden and the UK, various levels of hospitals (general and specialised) are distributed in planned regional networks. In other countries, like France, the Netherlands, Spain, and the USA, it is possible to identify three levels of hospitals — general, specialised and (very specialised) university hospitals ;

— differences in control mechanisms. To insure cost control and promote equitable resource distribution, most countries have developed systems to control hospital construction and operation. The means include normative standards (Sweden and the UK), incentive patterns by means of grants and subsidies (France, USA), and joint planning by government and non-government agencies (Spain). The control pattern is manifestly more complex and difficult to rationalise when hospitals are run not only by government but by religious groups, unions, philanthropic organisations, insurance organisations and private enterprises ;

— differences in referral patterns. In some countries (Belgium, Denmark, the Netherlands and the UK), a patient must be referred to a hospital by a general practitioner, except in emergencies. In France such referral is favoured by policy and followed by custom. In Sweden and the USA, access to hospital-based specialists is generally « open », i.e. the patient's choice of self-referral plays a key role.

The definition of hospital/specialised health care is meant to include these variations, but to exclude two significant areas that are sometimes associated with hospitals : general practice operations conducted in hospital-based clinics or offices ; intra-mural facilities of a continuing or domiciliary nature (such as nursing homes, chronic care facilities, and establishments for the aged). The intention of the definition, therefore, is to circumscribe the specialised diagnosis and treatment of serious acute illnesses.

A second point which requires some clarification is the use of the term « specialised » in connection with hospital/specialised health care. As we have already indicated, some primary health care systems involve specialists such as paediatricians ; but general paediatric care would in most cases fall in the primary health care domain, while paediatric surgery or treatment of children with cardiac deformities would be considered hospital/specialised health care. Equally, routine eye examinations and prescriptions of eyeglasses (whether by an optometrist or an ophthalmologist) are components of primary health care, while treatment of retinal detachment is an element of hospital/specialised health care.

In essence, the « specialised » functions of hospital/specialised health care are those that require the sorts of personnel or equipment ordinarily found only in the hospital setting, with its array of technical resources, and its galaxy of professional personnel trained to perform clearly-defined and complicated tasks with great skill. In passing, it must be noted that this characteristic specialised skill is not limited to neurosurgeons, psychiatric nurses, inhalation therapists and other hospital personnel who come into direct contact with patients ; it is just as necessary in the extensive supporting services such as chemical and bacteriological laboratories, blood banks, X-ray departments, and business offices.

As we have seen in Section 1, services for hospitalised patients consume more than 50 per cent of national health service expenditures, while yielding less than 10 per cent of the health care delivered to the people. These services are expensive both in capital (e.g. X-ray and other diagnostic services, radiotherapy, operating rooms) and in their demand for highly-trained personnel. In a very real sense, such services are in competition with primary health care, which must frequently « make do » with whatever resources are left after hospitals have been given support.

There are few people who question the vital role that hospitals must fill in health care systems. Throughout the OECD countries, however, there is a desire to limit the costs of this vital role in a way that will allow adequate support to other parts of the health care system. Regional planning, elimination of costly small hospitals and the establishment of networks of facilities are common approaches.

The most complete international analyses of the methods whereby hospital/specialised health care is being brought under control may be found in Bridgman and Roemer's exhaustive international study on **Hospital Legislation and Hospital Systems** (1973), and in Bower's **National Health Services** (1973). A number of other important contributions deal with particular aspects of the means used to effect control : regionalisation (Aisen, 1972), distribution (Cahiers, 1972), productivity (Hedberg, 1972), control of caseloads (Offensend, 1972), financing (Somers, 1966).

In all these efforts, the same aims can be found. There is a clear desire to increase cost effectiveness and quality by :

— **eliminating duplication** of expensive facilities of limited use, such as cobalt bombs, neurosurgery units, and cardiac surgery units, with the consequence of quality improvement through concentration of skills and the necessary infrastructure ;

— **avoiding unnecessary construction** by planning resources on a regional basis and providing means of transport to handle geographic difficulties and fluctuations in demand ;

— **utilising technology** such as automated and centralised laboratory facilities, centralised data processing, and regional food preparation ;

— **increasing unit output** by such management devices as regional scheduling of admissions to hospital, extending hospital work weeks to 7 days, and assuring optimal hospital occupancy levels.

But there is a more subtle and more important issue behind these efforts — one which we believe must be explicitly understood. It involves a dramatic shift in the perspective with which hospitals are regarded.

In the past, people have regarded hospitals, and especially university hospitals, as the centres of health care — and the hospitals and medical schools have thought the same. It is our firm view, however, that this conception is no longer the proper one.

We regard primary health care as the central function insofar as the patient is concerned. The hospital, which provides intermittent and specialised functions, we regard as a necessary and extremely important resource which complements primary care.

A large number of factors including technological and scientific advances, demand for specialised training, insurance plans favouring in-patient care, community aspirations, and career pressures have influenced the trend over the past three decades to a hospital-centred health care system. This has had the consequence of diversion of interest, prestige, and resources away from primary care and insufficient attention to illness and disabilities which do not require the resources of an active treatment hospital. It is now necessary to establish a more appropriate balance between hospitals and primary care facilities both in the delivery of health services and as a site for professional education.

We believe that our view is by no means unique. Bridgman and Roemer (1973), for example, point out that hospitals must be viewed as part of the total system, while the new reorganisation of the UK's National Health Service makes it necessary to balance hospital and other health needs at regional levels, and provides workers in primary health care with a voice in the decision making (UK White Paper, 1972).

POLICY IMPLEMENTING MECHANISMS

In pursuit of these policies — extending primary health care and controlling hospital/specialised health care — OECD Member countries have set in motion an array of implementing measures. These vary in their state of development and their effectiveness from country to country, but the similarities are striking.

National Planning and Management

Even though policies tend to be implicit more often than explicit, governments usually focus responsibilities for planning and implementation on some ministerial-level body. The management responsibilities thrust on such agencies have led them to work toward the development of planning mechanisms, information systems, and health indicators :

i) *National planning mechanisms*

Comprehensive planning for national health systems is a relatively recent phenomenon ; prior to this century, indeed, government intervention was deemed appropriate only in respect of illnesses and conditions that presented distinct and proven hazards to the public health, for example, epidemics, and sanitary conditions. Since the end of World War II, however, government participation in the provision of health care has become universal amongst OECD countries. The cost-demand spiral confronted policymakers with increasingly complex choices, and the need for orderly and incisive planning (especially in striking a proper balance between hospital care and primary care) became obvious. The elaboration of planning mechanisms is now widespread. Leadership in stimulating this development has been taken by the World Health Organisation both centrally (WHO Technical Report 456, 1970 ; WHO Technical Report 472, 1971) and at regional levels.

The techniques whereby different countries (or, in some federal countries, the respective states or provinces) have undertaken planning are varied, but they have usually focused on efforts to coordinate with other branches of government, and the provision of adequate guidelines for action at regional and local levels. The recognised difficulty with this process is that it is usually more effective in reinforcing the **status quo ante** than in promoting change ; normative guidelines dealing with construction or personnel standards tend to be created by the experience of the 1950s rather than by the needs of the 1970s. Efforts to escape from this circular pattern have concentrated on *i*) better approaches to predicting future needs and the steps necessary to satisfy those needs (Tengstam, 1975) ; Siderius, 1972), and *ii*) more accurate appraisal of current health problems (Navarro, 1969 ; Carnegie Commission, 1970 ; Blumberg, 1971). While always beset with the uncertainties of « futurology », such new planning techniques are beginning to show more accuracy, and impact (Bonamour, 1969 ; Charron, 1975 ; Tengstam, 1975), and more efforts are widely advocated (Hogness, 1973 ; Schwartz, 1972 ; Lee, 1972).

ii) *The development of information systems*

Both planning and management are utterly dependent on relevant, up-to-date information about what is going on in the existing health care systems. Despite the deceptively impressive volume of statistics gene-

rated by those systems, such information is now largely lacking (Rexed, 1973 ; WHO Technical Report 481, 1971 ; Pustovoj, 1972). Statistics regarding hospital admission rates or clinic visits, for example, do little or nothing to identify individual problems, the nature of the transactions going on during a consultation, the quality of professional service, incipient changes in disease patterns, or « hidden » problems such as undiagnosed illness. Progressive planning and management, however, hinge first on this kind of information. The conceptual work on systems to provide such data is now advancing (Harö, 1972 ; WHO Public Health Paper 55), and experiments are being carried out in a number of countries. Since most such information systems require the identification of individual patients, however, a central and unresolved obstacle to their widespread adoption is the issue of confidentiality.

iii) *The development of indicators, indices, and monitoring techniques*
It is important not only to assess what is going on within health care systems, but to monitor what is going on in the general population, much of which is not in contact with the systems. This involves identifying the population's state of health, and also its satisfaction with that state of health, i.e. the social context in which policies and practices can be designed. A large number of investigators and government agencies are therefore attempting to develop health indicators as a form of « social reporting » (Cohen, 1972). Such indicators are based on various techniques : statistical projections of population's state of health as measured by life expectancy free of pain or disability (Culyer, 1971); a variety of sampling and survey methods ; monitoring the quality of care by such means as periodic reexamination of practitioners, external review of treatment records and insurance reimbursement patterns, and (in the USA a system of intra-medical « Professional Standards Review Organisations ».

Naturally, there are other functions that are carried out by national health agencies : preparation of legislation ; establishment and surveillance of public health standards ; administrative relationships with other agencies ; establishment of normative standards (e.g. hospital beds per population unit, salaries, and so on). We are here, however, most concerned with those activities related to the formulation and expression of overall health care policies.

As we have seen earlier, these policies tend to be internally effective, and are generally oriented in the direction of promoting primary health care. They are frequently not sufficiently clear in their enunciation to be easily understood by those at lower levels in the health care system, or by those in other systems. In part, the dearth of policy statements may be attributed to the fact that planning mechanisms, information systems and indicators are all relatively primitive. As a consequence, policies tend to be developed incrementally, with a capacity for change in the light of experience.

An additional factor undoubtedly contributing to ambiguity is the next mechanisms to be considered : regionalisation. To a greater or lesser extent, most countries have delegated certain management controls and decision-making to regional and sub-regional authorities — and do not wish to interfere excessively with the mandates of those authorities.

Comprehensive Regional Organisations

In dealing with regionalisation, we again encounter the need to adopt language that can embrace a large number of national variations. In point of fact,

the populations of OECD Member countries range from below 3 million to over 200 million people. What one country terms a « region », therefore, can be larger in size and population than the entirety of another.

We believe that the best approach is to consider a « region » to be the smallest geographic/population area that requires a comprehensive array of health care resources ; additionally, as we shall indicate later, it should also embrace a comprehensive spectrum of educational resources. More concretely, a model « region » would include all types of community and home services, facilities for rehabilitation and chronic care, general hospital and specialised hospital facilities. While there is no magic yardstick at hand, accumulated experience in the UK and Scandinavia seems to indicate that a « region » can effectively include a population of about 1 million to 1.5 million people in a highly industrialised country.

From such a « regional » base, the size and organisation of a country will determine methods of central control and of necessary further decentralisation. The relationship between such units and national authorities is either direct (in smaller countries) or passes through one or more tiers of authority (in larger and especially in federal countries).

On the side of further decentralisation, both Ontario and England designate smaller « health districts » (in England and Wales, 200,000 to 500,000 people grouped around existing health facilities and corresponding to existing municipal or geographic realities) as operating sub-units within regions.

The objectives of regionalisation may perhaps best be seen in the detailed arrangements for a reorganisation of the National Health Service in England and Wales, which went into effect in April, 1974. In **Organisation for Change :** The British National Health Service, Chester (1975) analyses the historic forces and management benefits that led to this. In England and Wales, as in other countries, there are four objectives :

i) to bring about appropriate divisions of authority and responsibility among different levels of government, maintaining national norms and at the same time cultivating local initiatives ;

ii) to allow the management of health care systems to follow techniques and priorities most suited to local needs (WHO Public Health Paper 55) ;

iii) to bring about effective consumer participation in decision making, by means of public representation on advisory boards at each level ;

iv) to allow for effective cooperation between health authorities and authorities in other service areas (particularly social welfare). In England and Wales, for example, the new pattern of decentralisation will provide for coterminous health and welfare jurisdictions.

Hopefully, such a set of processes will result in more malleable, responsive patterns of health care, with greater effectiveness and citizen satisfaction, and with more effective working liaisons with other social agencies. From a national viewpoint there is still another advantage : regionalisation allows for alternative and even competitive approaches to health care, and permits thorough evaluation of those varied approaches before they are adopted on a national scale.

These potential advantages of regionalisation are not reduced by a realistic appraisal of the difficulties that arise. Regional health authorities must face the same problems as their national colleagues : inadequate information systems, uncertainty about methods for maintaining cost-effective operations, and so on. They deal with such additional dilemmas as the appropriate division of responsibility among the different levels of authority. But the UK's approach of « horizontal » and multidisciplinary management teams, appropriate consultative bodies and intensive preparatory educational efforts (as described by Chester, 1975) would appear to grapple with most of these problems. At the very least, re-

gional organisations are in closer contact with consumers, and embrace a network of people and institutions who are in frequent if not daily contact. The feedback circuits in such a system are consequently far more rapid and effective ; provided the level of managerial skill in the system is sufficiently high, regional systems should have a good chance of achieving their objectives.

Modification of resource distribution

Within every country's health care system there is a set of financial incentives and disincentives that has a heavy impact on how the system really functions. Naturally, these operate in different ways ; significant differences exist between « nationalised » systems (like the UK) which undertake direct responsibility for health care operations, those (like France) where care is provided by a mixture of government-supported facilities and government-controlled insurance, those with a long history of compulsory health insurance (like Germany, where the process began in 1871) and those (like the USA) where the government is at the moment in a partially supportive and stimulating position. Inevitably, however, they push or pull the citizens and the system towards different utilisation patterns, and there is a continual search for methods of making the financial structure maximally congruent with health care priorities.

It is deceptively easy to recognise how funding methods can alter health care patterns. The flow of capital investments, for example, can change the face of a health care system. In the UK, the construction of health centres has had such an impact ; there were 33 in 1965, 280 in 1972, and the figure will mount to 2000 by 1980 (Murray, 1973). Control of construction funds for hospitals, and investments in facilities for the chronically ill and aged, are similar examples which may be found in every OECD country

In the same way, arrangements for recurrent operating expenditures can influence the way the system works. As we have noted, the insurance pattern in the USA tends to favour hospitalisation. In the UK, the basic reimbursement to the general practitioner (calculated on the number of patients registered with him) has been augmented by supplementary payments (for group practices, home visits, preventive activities such as immunisations, the use of secretaries, etc) to such a degree that general practice is an increasingly attractive career choice for physicians. In Belgium, insurance reimbursement for pharmaceuticals can only be received when the drugs are on an approved list. « Health maintenance » programmes in the USA, involving prepayments for total care made to a health care organisation, result in motivation on the part of physicians and other professionals to avoid hospitalisation and to promote prevention and extra-mural care. There are many proposals for more such measures, including some which gear insurance to policy priorities by using variable subsidies (Pauly, 1971) and vouchers (Whipple, 1973).

But optimism as to the manipulation of incentives and disincentives must be tempered. The application of such measures in the service sector, especially when support is derived from governmental or quasi-governmental sources, is subject to many legal, ethical and political constraints. Additionally, major shifts in financial incentive-disincentive mechanisms can sometimes lead to unexpected and disruptive increases in utilisation and expenditure, as was the case in the USA « Medicaid Program » aimed at low-income adults. There are justifications for caution, therefore, and for preliminary testing of changes like the « social experiments » now being undertaken in the USA : large scale pilot programmes to test the results of different forms of health insurance, guaranteed income bases, and so on. (Abt, 1973 ; Kershaw, 1972 ; Newhouse, 1972).

Clearly, this field requires continued and even more intensive examination at every level.

Health Care Delivery Research

The health care systems of Member countries have conducted or supported extensive research aimed at improving their capacities. The volume and direction of this research have been variable, however. The heaviest resource allocations have been made to basic scientific research, usually of a biomedical sort; such research has been government conducted (as in the US National Institutes of Health) or supported (the US grant programmes, support of universities and institutes in European countries). A certain amount of basic scientific research has been directed at analysis of health care delivery problems, mostly by social scientists or by epidemiologists.

The urgent need for a vigorous increase in health care delivery research, and the principles which should guide such research, have been expressed most clearly in the report of an advisory panel to the US Office of Science and Technology (1972). Almost simultaneously the Nuffield Provincial Hospitals Trust published a comprehensive account of health services research undertaken in the UK by the Department of Health and Social Security (McLachlan, 1971). These and other works suggest the imperative need for expanded research along certain lines :

- explorations of new professional roles and inter-relationships in general in specific functional situations (Donaldson, 1972) and in studies of social change (Bice, 1971);
- pilot programmes to meet specific needs such as health assessment, accident care and centralised laboratory facilities (Egeberg, 1972);
- analysis of systems and processes (Elling, 1971 ; Navarro, 1969), including productivity studies (Hedberg, 1972);
- studies of cost-effectiveness, which appear to have value at present only in considering alternative treatments for a sharply defined illness with a known natural outcome (e.g. evaluation of renal transplants vs. renal dialysis for the treatment of renal insufficiency);
- evaluative studies of various models of health care delivery like the « health maintenance organisations » in the USA (Newhouse, 1972);
- adaptation of classical epidemiological methods to contemporary problems such as ageing, pollution, accidents, etc.

Indeed, much is going on in health services research, and new areas are in need of exploration — not only for the purpose of advancing knowledge, but also for imbuing health professionals and the public with attitudes geared to continuous change. For both purposes, as McLachlan (1971) has pointed out, maximum public and professional scrutiny of such studies is needed so that results and implications can have the strongest possible impact.

SUMMARY

In response to the calls placed upon them by consumers, professionals, and governments, health care systems are adopting new orientations. In fashions suited to national characteristics, they are focusing their efforts on expanding and improving primary health care. This focus calls for teamwork, increasing preventive, socio-medical and maintenance activity, and new partnerships with other social agencies.

To bring about this reorientation, OECD countries have adopted various forms of central planning, regionalisation, and financing. As the reorientation moves forward, new problems and uncertainties continually appear, and more expansive programmes of health services research are being pressed for in every quarter.

Health care systems, then, are found to be in a state of transition. They are establishing new balances between the hospital-based bioscientific model of « medical care » and community-based primary health care, and are restructuring their administration and research to accommodate that new balance.

Section 4

EDUCATIONAL RESPONSES TO TRENDS IN HEALTH CARE SYSTEMS

The actual and potential linkages between education and health care are numerous and vital. As might be expected, therefore, the shifting orientation of health care systems is causing reverberations throughout the educational world on account of the new calls being made on it. The central issues are three : How well are these calls being heard and understood ? How prepared are the educational systems to respond ? How well are they responding ?

As we have reviewed these issues, we have become increasingly aware of some unfortunate paradoxes and deficiencies in health care/education interactions. On the one hand educational systems are gripped in the throes of change just as strongly as the health care systems ; the last decade has seen quantitative expansion, new types of institutions, new curricula and new technologies in education at all levels. In such a situation, opportunities for innovation abound, and we have found a veritable host of imaginative educational ventures geared to improving the number and quality of health professionals.

On the other hand, the many innovative educational programmes that exist tend to be scattered and small, dealing with one or another of the health professions, from the perspective of one or another characteristic of the movement toward primary health care. Only rarely are there major institutional or system-wide conjoint efforts involving both health care and education.

At a time of educational change and ferment, this absence of coordination is disturbing. We believe that the causes can be found in certain structural elements in present educational systems ; but a number of successful experiences indicate how these structural difficulties can be overcome.

The principal immediate result of this paradoxical situation is the existence of a great gulf between prescriptions about what education for the health professions should be doing, and what educational systems are actually doing. Both the prescriptions and the actions are important in leading toward a resolution of the paradox, and we present them in the following sections.

Prescriptions for Education of the Health Professions

Prescriptions for innovation, change, and experimentation in education of the health professions come from government leaders, educational authorities, health authorities, professional organisations, and individual scholars. They fall into several broad categories, and these can best be considered in sequence.

Overall Planning and Coordination

There is a wide consensus on the need for viewing education of the health professions as a totality. Rexed (1973) has outlined the multiple interactions and interdependencies of the two systems : he emphasised that different educational programmes at different levels must be coordinated, and pointed to the cooperation which is essential between education and health care, if the two are jointly to serve national health care needs. Evans (1971) has emphasised the

practical requirements that demand this large-scale coordination : the need for compatibility of functions and attitudes of health personnel ; the need for a balanced manpower effort ; the need for more efficient use of educational resources ; the need to give individuals more career opportunities and career mobility ; the need for coordination of accreditation. The interdependency of health care and education is reflected in the fact that in the organisational patterns in the UK and in several Canadian provinces health systems have been designed with the intention of encouraging interactions between health regions and educational institutions.

In terms of coordinated planning, most attention has thus far been paid to quantitative manpower needs. Planning must be done, facilities and faculties developed, students educated — or the health care system cannot function. But it seems clear (as Ahamad and Blaugh (1973) have shown) that manpower forecasting in health, as in other fields, is riddled with uncertainty. The studies of Todd (1968) and Blumberg (1971) on medical education, Briggs (1973) on nursing education, and the Carnegie Commission (1970) on education of the health professions, have all been confronted by the same problem : how to assess needs in one profession without considering needs and potentials in all the health professions. The number of practitioners needed in a given health profession will depend upon what functions that profession performs, and that question in turn depends upon the numbers, abilities and deployment of the array of other professions. These studies and others, therefore, call for more efforts directed at rationalising overall needs, even as they may address themselves to the education of a single profession. The dilemma was most explicitly recognised in a report concerning « Future arrangements for health education » by the Ontario Council of Health (1971) which, while calling for coordinated planning for the ensemble of professions, had to limit itself to quantitative plans for medical education.

In short, there is no absence of desire for coordinated educational planning for the health professions. Most prescriptions, however, have not been able to recommend adequate specific mechanisms. They have cited the uncertainty of projections, the changing nature of clinical practice and the absence of sufficient information as the reason for more partial recommendations.

Educational Involvement in Community-Level Health Services

In the long history of education of the health professions there has never been a time when education was not linked with service. Over the last 50 years, however, the practical learning experiences of students have become increasingly removed from ordinary health services as the super-specialised university hospital has come to comprise almost all of the practical learning experience provided to students. Referring to the US situation, Kennedy (1973) noted : « Medicine that is practised in the university centres — is not the medicine practised in the field. And yet medical students are educated in [that] setting. We do an excellent job of teaching physicians to take care of a few people, and a poor job of educating physicians to take care of most people ».

Such comments are to be found in almost all countries, and corrective proposals are equally unanimous : there is a need to redistribute the nature of the student's practical learning experience so that it is appropriately distributed across the spectrum of health care. In practice, this prescription requires that educational institutions become involved in primary health care to an extent equal to their involvement in hospital/specialised health care. (Rogers, 1973 ; Rose, 1970 ; Ebert, 1973 ; Querido, 1972). As one reviews international proceedings (as in Friberg's synthesis of a conference held under the auspices of the Council

of Europe in 1972) one perceives the same theme, differently presented, emerging in country after country.

What these prescriptions mean, of course, is that new settings for teaching must be found or created. In the present situation, the principal environment for practical experience is a teaching hospital ; it is here that physicians, nurses, dentists, technicians, dieticians and others learn their roles ; equally, it is here that they learn to work together in hospital based teams, and where their basic clinical attitudes are formed.

But if the professions are to learn roles in primary health care, and learn to work together in such care, new types of environments for practical learning must be created, and students and faculty members must be brought to them. New kinds of financial and construction mechanisms must be devised to this end. Exactly this idea was clearly expressed in a report of the Australian National Hospitals and Health Services Commission (1973) which advocated community-based clinical operations with adequate resources for teaching.

It must be remarked that none of these prescriptions call for abandonment of teaching hospitals, which will continue to play a major role in education as they do in health care. They call, instead, for a more appropriate balance in the location and content of education of the health professions.

Curricula Involving Experience with Primary Health Care

The prescriptions for involvement in primary health care do not leave the matter at a level of general recommendations for a better community/hospital balance at the institutional level. More detailed recommendations are concerned with the direct involvement of students in the delivery of primary health care, and with curricula designed to prepare them to work in primary health care.

As might be expected, the nature of the curricular proposals differs from country to country. Proposals in developing countries favour preparation for comprehensive practice (Bryant, 1969), while those from OECD countries are geared to preparation for a variety of national patterns, e.g. « family practice » and « primary medical doctors » in the USA (Ruhe, 1970 ; Proger, 1972), « general practice » in the UK (Todd, 1968 ; British Medical Association, 1970). A German law of 1970 governing medical education makes specific provision for practical work with patients before and during the formal elements of medical curricula (Approbationsordnung für Ärzte, 1971). Behind the variations, the theme is constant : involvement of students in the personal delivery of health care at the family and community level, working side by side with practitioners accustomed to working at that level.

Interprofessional and Interdisciplinary Educational Programmes

The movement towards new kinds of health care teamwork, and increasing involvement with complicated socio-medical problems, have created a growing recognition of the need for interprofessional education drawing on a wide range of disciplines. Students must develop a common language and a common understanding of the various roles and abilities they each possess if they are to work together in health care delivery teams. Teaching and research efforts require interdisciplinary approaches.

There are many expressions of these prescriptions. Thus, Cornillot (1973) has constructed a conceptual model of a » University of Health », which presents a dramatic picture of the ways in which interprofessional and interdisciplinary education should impinge on the health professions and related professions such as law and engineering. The vital need for linkages has been emphasised from

the viewpoints of research (Schar, 1972) and teaching (Todd, 1968). The common thread of these arguments is the desire to develop what Lambertson (in Institute of Medicine, 1973) has called a « shared culture » : a broad common understanding between disciplines and professions, as they tackle problems none of them can handle alone.

Education Oriented to Students and to new Professional Roles

A new pedagogical orientation for professional education has been called for on two grounds : concern for the individual, and concern for the health care delivery system. Many observers have concluded that the present state of professional education is inimical to both. As specialisations and sub-specialisations have proliferated, and as procedures for accreditation and licensing have multiplied, rigidities and hierarchies have multiplied. At this moment they constitute a widespread web : the individual entering the web at any given point is subjected to a predetermined narrow programme, with little or no opportunity for mobility and transfer. By the same token, the health care system finds itself coping with dysfunctional divisions of labour between too many narrowly trained professional groups.

There appear to be two approaches to the amelioration of this state of affairs :

i) the creation of learning situations that increase student motivation, use of abilities, and interests. With this orientation, the use of a variety of refined teaching techniques (WHO Public Health Papers 20, 44, 52) can provide opportunities for individualising instruction with a host of options (Goldschmidt and Goldschmidt, 1973), and for responsibly guided independent learning (Moore, 1973). Improving teacher training and using improved methods of evaluation can open the door to full mobilisation of student resources, and to genuine career mobility ;

ii) Clarification of the functional objectives of professional education. In some views, the entire structure of the health professions has become too stratified and fragmented, with consequent redundancies, waste, and discontinuity in care. A step in the right direction, a method improving both student opportunities and educational efficiency, would come about by increased simplicity and clarity about educational objectives (Miller in WHO Public Health Paper 52 ; Guilbert, 1973).

The two approaches, then, come together in aiming for a set of clearly defined learning objectives toward which students can work in different ways and at different paces, with maximum opportunities :

a) for the student to have lateral or upward mobility in the light of his or her abilities and experience,

b) for the educational system to eliminate wasted efforts, and

c) for the health care system to create new patterns of health care delivery in such a way as to use the individual's professional competences most effectively.

Reorganisation of Basic Science Preparation

In Part II, Section 1, a set of general trends in education of the health professions was described. Two components can be recognised : general professional education, involving applicable basic and clinical sciences, and the later acquisition of specialised professional skills. As a result of rapid scientific developments during the past 4 decades, the broad concept of human biology — how a human organism grows and develops somatically and mentally, and how this organism

interacts and maintains itself in its physical and social environment — is becoming the basic science for the health professions.

The science of human biology can be taught at different levels of knowledge. How much depth is required for a given profession will depend on the amount needed for general professional education. Specific further knowledge in depth can be added during the later period of acquisition of specialised professional skills.

The problem at the moment, however, is that the basic sciences included in general professional education tend to be overwhelmingly devoted to somatic processes, while knowledge and skills about the interaction of human beings with their physical and social environment are neglected. One is therefore confronted with a pressure to reorganise curricula, aiming at a more appropriate balance between natural science and social science learning experiences (Dahmer, 1972 ; Hjort, 1972 ; British Medical Association, 1970 ; Rose, 1970).

Manifestly, too, there is a need to incorporate varying amounts of knowledge and skill in management techniques in the education of the health professions at every level, as emphasised by a WHO advisory group (WHO Public Health Paper 55). For those who are being prepared for higher management positions in complex health care systems, the range of educational content needed is impressive : information systems, finances, organisational structure and operations monitoring, decision-making, and the human relations and personnel practices related to a heterogenous, labour-intensive service (McLachlan, 1975).

There is as yet, however, little agreement on how to redress the balance in detail. Additionally, the present composition of faculties with a heavy investment in biological science in the restricted sense — will call for more than internal changes — whole new methods of interaction with other resources in the entire university seem to be necessary.

Lifelong and Recurrent Education

At the present time, many OECD Member countries are considering some form of Recurrent Education (OECD, 1973). In a conceptual sense, recurrent education involves lifelong opportunities for intermittent education after the end of compulsory schooling. It calls for a departure from the present pattern of a continuous early period of schooling followed by an unbroken life of work, and substitutes periodic spells of education more geared to individual needs.

In the light of present health care needs, it is doubtful if there could be a wholesale departure from early preparation for entry into the health professions : advancing the average age of entry into clinical activity would cause severe manpower shortages in the absence of an (unlikely) enormous expansion of professional education.

There are four ways, however, in which recurrent education could benefit education of the health professions. A number of educators have recommended shortening the duration of initial professional education, and providing post graduate opportunities for :

a) periodic recycling education to allow professionals to keep abreast of advancing knowledge and techniques (Carmichael, 1972),

b) periodic opportunities for reentry into education for purposes of lateral or upward career mobility (Carnegie, 1970 ; Perry, (1969),

c) modifying the skills and activities of those in practice in the light of shifting health care patterns, and

d) periodic reeducation of faculty members, particularly in respect of educational advances and pedagogical techniques.

All these recommendations are contingent, of course, upon better clarification of educational objectives, and the development of improved methods of evaluating the levels of clinical competency of practitioners.

The Present State of Education of the Health Professions

In the face of these wide-ranging prescriptions for change, the responses of systems for educating the health professions have been limited. The great bulk of the educational enterprise remains oriented to hospitals, diseases, and natural sciences and is for the most part uncoordinated.

This is not to say that there are no innovatie educational programmes, or that there are no attempts to meet the challenges of new health care needs. In point of fact, as we shall see, innovative and responsive efforts abound. Very few of them, however, are operating in a sufficiently broad fashion, on a sufficiently large scale, that they can be expected to bring about the major changes called for in a timely way.

In order to emphasise the gap between the prescriptions and the reality, while at the same time recognising the existence of innovative approaches, we shall review the present status of education in the light of each of the prescriptions.

Overall Planning and Coordination

It is worth emphasising that the notion of overall planning and coordination for education of the health professions faces serious problems at the start. As has been seen in Sections 1 and 2, these basic difficulties include :

i) the absence of clear policy statements from health care systems ;
ii) divisions of educational authority that interfere with unified educational responses ;
iii) at a level lower than that of policy-making, funding and administration mechanisms that bind professional schools almost exclusively to hospitals ;
iv) Faculty members of existing professional institutions oriented to the basic natural sciences and hospital/specialised health care, and are unenthusiastic about movements toward primary health care and social sciences ;
v) excessive concentration on quantitative manpower planning which cannot cope with the qualitative issues at stake.

It is therefore not surprising that movement toward overall planning and coordination for educating the health professions has been spotty and slow. It is however particularly important to recognise that some efforts are underway, and to note the factors that have promoted these efforts.

Charron (1975) has described the emergence of coordination in Ontario, Canada, in response to national legislation which in 1966 provided health insurance to the Province's 8 million people. The Ontario Council of Health was created — a body with a broadly representative public and professional composition, charged with the mission of recommending health care policy to the Provincial government. Numerous subcommittees were formed ; hearings were conducted ; studies were undertaken ; consultations with thousands of citizens, government officials, health professionals, and educators took place over a 4-year period. By 1970, the Council was able to begin issuing a series of comprehensive reports calling for regionalisation of health care, the coordination of professional

education by means of regional ensembles called « health science complexes » [1], the formation of local « District » councils, readjustment of enrollments in professional education and in methods of professional licensure, and a reorientation of the nature of professional education. Simultaneously, an interministerial working party assured that government resources were guided by these recommendations, and that conjoint education/health care efforts at regional levels were encouraged.

In Sweden, a completely different government pattern has arrived at a similar outcome (Tengstam, 1975). There, regionalisation of health care has long been accepted. The role of the National Board of Health and Welfare has historically been one of establishing policies which can serve as guidelines for action by the central government and by the implementing County Councils. Over the last ten years, extensive consultations at all levels has led to systematic planning procedures and finally, in 1974, to publication of health plans for the 1970s and 1980s — plans which emphasise primary care in community centres, improved training for professionals, assurance of adequate numbers and types of health personnel in all of the different health professions. Simultaneously, educational plans have been recommended, after similar consultation, as a result of the work of a group commissioned in 1968 (the « U-68 » report). These plans will end the split between university and non-university sectors of higher education, and foster the conjoint education/health care action at a regional level.

In Australia, concerted efforts at planning have been undertaken under the auspices of the National Commission on Hospitals and Health Services. Again, a pattern of widespread consultation and special studies has led to a series of recommendations dealing with community-based primary health care and reorganisation of the education of physicians and other health professions. A special recommendation regarding the need for teaching primary care to medical students issued by the Australian National Hospitals and Health Commission (1973) led to government provision of support to conjoint efforts by clinics and medical schools in December 1973.

In the UK, the reorganisation of the National Health Service (UK White Paper, 1972 ; Chester, 1975) will afford similar, but not so clearly defined, possibilities for interaction. The new Area Health Authorities are intended to promote health care/education interactions, and should be able to work effectively with professional education in the university sector (principally Schools of Medicine and Dentistry) Similar regional arrangements will hopefully also be made for non-university institutions (polytechnics and free-standing professional schools) to enable regional ensembles to come into being.

In Finland, regionalisation of both health care and education has led to a close interaction between the systems. At the University of Kuopio [2], for example, planning bonds between the two systems have brought about joint health

1. The Health Sciences Centre of McMaster University contains schools of medicine (340 undergraduate and 200 post-graduate students) and nursing (300 students). It serves as the hub for education of the health professions in a regional " health sciences complex " which incorporates a College of Applied Arts and Technology with a school of nursing, a school of laboratory technology, and a school of radiography. The " complex " includes 5 general hospitals, one of which is on the university campus, a psychiatric hospital, and a rehabilitation hospital which together serve as the principal physical resources for health services in a Metropolitan District and its surrounding geographic region (which has a population of 1,250,000 in an area of approximately 6,000 square miles).

2. The Health Sciences programme at the University of Kuopio prepares students in medicine, dentistry, pharmacy, clinical chemistry, and medical physics. Teaching programmes began in 1972, and enrolments in these programmes (and in Natural and Social Sciences) will total 2500 in 1982. Clinical education is conducted in the 1000-bed regional hospital and in community health centres of a large geographic area with a population of 70,000.

care-education participation in planning and in operations, as well as coordinated education for the various health professions.

In Germany, a government-sponsored advisory body (the Wissenschaftsrat) has viewed the totality of education of the health professions, and has set forth a pattern for coordinated education of nurses, medical technicians, and other health professions at university level (Wissenschaftsrat, 1973). The recommendations, which are geared to changing health care needs, are now being considered for adoption at universities.

In countries without centralised systems of health care and education, this type of planned coordination is more difficult but not impossible. The creation of a regional health care/education ensemble in the loosely organised USA system has been excellently described by Pellegrino (1973) with reference to the Health Sciences Centre of the State University of New York at Stony Brook [1]. In that instance, a system rather like the Ontario « Health Science Complexes » brings together a variety of educational and service institutions, with citizen participation in decision making.

Unusual local conditions appear to favour a coordinated approach to health care and education, even in countries where national arrangements are less coordinated. Thus, one finds coordinated regional planning in geographic areas that require special development programmes, such as Tromsö, Norway [2] (Nordøy, 1973) and the University of the Negev (Prywes, 1973). In both of these instances, the University Health Science Centres have undertaken leading service roles in the design and management of regional health services, and students in medicine, nursing and other professions are educated not only at the University site, but throughout the regional system.

At the moment, spontaneous regional groupings and regional programmes stemming from unusual conditions can only influence national policies and planning by example. The impact of that influence, in the absence of national policies and mechanisms, has yet to be determined.

Educational Involvement in Community Level Services

Large numbers of educational institutions are currently pursuing participation in community health services and primary health care. But the extent to which these efforts engage the entire institution and its educational programmes, and the balance they achieve vis-à-vis the classic investment in specialised university hospitals, seems to be dependent upon the nature financial and administrative contexts in which the institutions work.

Thus, when the institutions are operating within the context of overall planning and coordination, the involvement tends to be institution-wide, engaging various levels of education and a number of professional programmes in balanced activities within community-based as well as hospital-based practical learning experiences. This is the case with the institutions cited in the previous section.

1. This Health Science Centre includes schools of medicine, dentistry, nursing, allied health professions and social work, with a total of 3000 full-time students. Educational and clinical facilities on the university campus are supplemented by teaching opportunities in 5 other major clinical centres in a geographic region with a population of 3.5 million people.

2. The Medical Faculty of the University of Tromsö, Norway, contains schools of medicine, nursing, and allied health professions. It is responsible for the quality of health care in its region — a large sub-arctic area of northern Norway with a population of 500,000. Nurses and physicians are given common instruction in the first year of the curriculum, and a number of health professions share common clinical experiences at later points. Special features of the curricula include extensive use of social science teaching and periodic learning experiences in community health centres.

When this broad context is missing, however, educational involvement in community level services tends to become much more localised **within** the educational institutions. Community activities tend to be handled by departments (of « community » or « family » medicine, of « public health » nursing).

Such activities are significant and valuable without doubt when the departments are able to command means of paying faculty independently of hospital services, and when they have full access to the community health care system. In the Netherlands, for example, a university-based Department of Family Practice will :

a) operate a few general practices directly, as research foci, and
b) through the mechanism of an « Institute », develop working and teaching relationships with primary health care services of the area.

Through the « Institutes », medical students and graduates have the opportunity of gaining experience in primary health care, with supervision and theoretical training provided by the Department.

In most such cases, however, the number of faculty is relatively limited, and so in consequence is the volume and impact of the involvement (in contrast to heavy curricular efforts on the hospital/specialised end of the spectrum). In countries such as Spain and France, where almost all educational funding sources are linked to hospital-based activities, such departments must depend almost entirely on part-time and volunteer faculty, and on the willingness of community agencies. In these situations, educational involvement in community level services is often more symbolic than real.

Three notes of caution must be struck in respect of educational involvement in community level services. The first has to do with insuring a proper balance between hospital-based and community-based practical learning experiences. In a number of cases in the United States, medical schools have been constructed without hospital facilities. In such instances as that of the School of Human Medicine at Michigan State University (Downs, 1972) a regional system of community relationships has been developed, and has produced good opportunities for students to have practical learning experience in both hospitals and clinics controlled by those communities. As a general rule, however, it seems wise to insure from the start that the proper balance of environments for learning will be available ; leaving the issue to subsequent negotiations seems hazardous. Educational experience in specialised hospitals under the direction of specialised faculty is not an alternative to experience in the community. Both are necessary, and every institution educating the health professions should be provided with both.

Secondly, it must be emphasised that institutions (or departments of social medicine) can have a very large research relationship with one or more community health projects without a corresponding educational involvement. Thus, 34 major community health programmes in the US are or will be conducted under the direction of academic health science centres. In only 5 of these programmes, however, will all professional students be regularly involved in learning experiences ; 11 programmes will allow limited opportunities for less than a quarter of the students ; 11 will provide no learning opportunities (Spingarn, 1974). Such large programmes, in effect, are major research or service appendages to the institution, but the basic focus of educational programmes remains unchanged. Educational investment in community level services must be measured by teaching, and not merely by research effort.

Thirdly, the nature of the relationship between educational institutions and health care delivery must be regarded with some caution at the present time. Three patterns can be found : an educational institution may take total respon-

sibility for a regional health care system : it may exercise total control over a smaller « model » programme ; or it may play a leading but selective role in a system run by other authorities and agencies. While it is too early to judge the final costs and benefits of these alternatives, it would appear that the pattern of selective participation offers fewer risks and more long range benefits. Such participation allows the institution to develop a partnership with a full scale system ; the partnership, however, is one which can be adjusted to educational need, and can be modified as new patterns of health care and education emerge.

Curricula Involving Experience with Primary Health Care

Curricula for educating the health professions extend over a variable period of time — from 2 to 12 years of post-secondary education. In all instances, however, curricula include three elements : general education, professional education, and specialisation. With respect to the latter two, it is of key importance that professional education keep the specialised options open : that the qualified nurse is prepared to pursue home nursing, hospital nursing, or surgical nursing ; that the qualified physician is prepared to pursue ophthalmology, internal medicine, or primary health care.

As regards primary health care, two problems are presented : familiarising the student with the basic elements of primary health care in his professional education ; providing adequate opportunities for specialisation in primary health care when the student proceeds to service.

On both of these scores, organised efforts are advancing in a number of countries. In basic professional education, medical schools in Australia, Canada, England, Germany, Sweden, the UK and the USA are using a number of similar techniques ; early learning experiences with general practitioners (Southampton, Nottingham, Newcastle, Tasmania, Ulm) ; early experience with family care (Case-Western Reserve) ; involvement in rural (University of Florida and Memorial University, Newfoundland) or urban (Tufts University) health care. At the level of specialisation, post-graduate sequences are available in Canada, England, France (in planning stages), Germany, the Netherlands, Sweden, and the USA.

Similar developments are going forward in other professions though with less definition at the specialised level : programmes for nurse practitioners at McMaster University ; primary health care experiences for nurses, dieticians, physiotherapists, dentists and others during professional education. Specialisation in primary health care is largely concentrated on nursing, however, with programmes organised around home and visiting nursing, nurse practitioners, and nurses specialised in the treatment of specific conditions such as ageing or chronic diseases.

There is a strong tendency among institutions which provide practical learning experiences in primary health care to develop such experiences in common for a number for professions. As Evans (1971) has pointed out, conjoint programmes are most effective when they stem from common clinical experiences. A number of institutions, therefore, provide basic professional experience in primary health care simultaneously to students in medicine, nursing, social work, and other fields (Pellegrino, 1973 ; Nordøy 1972).

It would be deceptive to portray this vigorous pursuit of education in primary health care as a dominant factor in contemporary education of the health professions. Many of the programmes organised along such lines occupy 50 or less hours within a 2000- hour professional educational sequence ; many professional schools are making no efforts whatsoever. At present, the great bulk of educational endeavours continues to rest at the hospital-based end for the spectrum.

Interprofessional Educational Programmes

As we have already observed, the manifest need to prepare professional students for teamwork has given rise to calls for shared educational programmes, and for interdisciplinary courses. Over the last decade a significant number of responses to these calls have been undertaken by educational institutions — but the results remain uncertain.

In the face of this uncertainty, OECD's Centre for Educational Research and Innovation (CERI) is currently conducting a detailed examination of interprofessional and interdisciplinary educational programmes for the health professions, as part of its larger study of Curriculum Development in Higher Education. The final results of this examination will not be known until after an international review in 1975. Preliminary findings from the survey and from preparatory meetings of experts from Member countries, however, shed considerable light on present trends, and support the appraisal set forth below.

Interprofessional Educational Programmes

Existing programmes must overcome a number of difficulties : the administrative structure of education ; the scattered location of different professional schools ; differences in the educational background, motivation and age of students preparing for the different professions ; and a large variation in the duration of different professional studies. Obviously, all students cannot share all experiences at all times. The question, therefore, centres on the proper selection and timing of common educational experiences. Three approaches are evident :

— Common pre-professional instruction in the basic sciences. Such an approach is embodied in the first year of the medical-biological sequence in France, where a common curriculum is presented to students in medicine, dentistry, pharmacy, and biology. It is also incorporated in plans for shared early learning experiences for students pursuing public health, social services, medical assistantships, occupational therapy and physiotherapy in Sweden (Swedish Ministry of Education, 1974).

— Common clinical experience of the sort favoured by the « health science centres » we have cited previously : pharmacy students working on hospital wards with medical and nursing students ; nursing and medical students assigned jointly to community health centre experience ; dental students and dental assistants working together in « four-handed dentistry ».

— Planned sequences of common pre-professional and common clinical experiences. Such ventures are exceptional, generally starting with a large « common core » that gradually diminishes in later years of the various professional curricula. Such patterns are pursued for students of nursing and medicine at the University of Hacettepe, the University of Kuopio, Laval University, and the University of Tromsö. A variant of this model is in use at the State University of New York at Stony Brook : selected parts of basic science instruction are variously shared by students in medicine, dentistry, nursing, pharmacy, physiotherapy and social work, and common clinical experiences are similarly planned to cover areas where specific professional roles interact.

Efforts to provide common pre-professional instruction in basic sciences seem to be far less numerous than efforts to provide common practical experience. The reasons appear to be both logistic and conceptual : the numbers, distribution, and characteristics of the students on the one hand, and on the other, the argument that the essential element to be pursued is in fact practical rather than theoretical preparation for teamwork.

It must be emphasised that common educational experiences for students pursuing different professions, while numerous, are exceptions to common practice. Most health profession students remain segregated in separate schools with separate faculties. Even if, by chance or by design, they have learning experiences in a single facility (e.g. a university teaching hospital used by several schools), common educational interactions are usually not provided.

Interdisciplinary Educational Programmes

While interprofessional educational approaches are uncommon, interdisciplinary approaches of significant size are rare indeed. Such interdisciplinary efforts as exist tend to be concerned with relatively narrow topics, such as heart surgery or with a restricted number of disciplines in the biological sciences. Most often, they appear as small parts of a curriculum, rather than as pervasive approaches. Notable exceptions to these limits appear to be the comprehensive interdisciplinary orientations of the Universities of Tromsö, Ulm, Stony Brook, Hacettepe, and the Negev. In these instances, planning groups drawn from a large number of professions and academic departments designed curricula from several health professions, and incorporated interdisciplinary linkages between the curricula in an overall strategic framework.

Education Oriented to Students and to New Professional Roles

Many educational programmes are aimed at preparation for **additional** professional roles. The WHO devoted an entire issue of World Health (June, 1972), for example, to an account of programmes for the preparation of medical assistants in America, Africa and Asia. Less well-known programmes involve the teaching of more specialised (e.g. paediatric) assistants, and the preparation of personnel for specific new functions (e.g. « health visitors » in England, « community health workers » in the USA).

Most of these efforts clearly constitute an extension of the already over-long list of health professions and occupations. They do not involve modification of the classic professional roles, or the basic preparation for them. To the best of our knowledge, the appearance of new professions has not resulted in the reorganisation or modification of preparation of the existing professions. Inevitably, therefore, the creation of new professions serves only to worsen the existing confusion of overlapping educational efforts and professional roles.

It is by no means certain, therefore, that more specialisations are the best responses to new health care functions. Alternative methods involve the modification of classical roles : the « nurse practitioners » trained for more advanced and independent work in Canada ; the nurses being given additional functions (e.g. acting as general assistants and supervising the continuing treatment of diabetic patients) in Sweden ; and the preparation of nurses, dieticians, and social assistants to take on managerial roles in France (Robert, 1974). A new type of auxiliary medical personnel may indeed be the only practicable answer for regions bereft of resources, but for developed and industrialised countries a more judicious means for using existing personnel would seem to be more desirable.

On the score of student-oriented education, efforts also seem to lag far behind the cries for action found in such publications as « Development of Educational Programmes for the Health Professions » (WHO Public Health Paper, 52), and in the repeated calls of educational researchers. The major responses seem to be a general movement toward wider options and flexibility in undergraduate education (particularly in medicine). Associated with such undergraduate flexibility, however, one frequently finds an increased duration and codification of post-

graduate training — a pattern that raises the question of whether increased undergraduate flexibility simply results in « writing off » the importance of that period and substituting a later period which « really counts ».

Moreover, flexibility is not necessarily associated with concern for students. Programmes designed from the start with a definition of educational objectives and means, thereby allowing students to work toward those objectives in the fashion best suited to them (e.g. the programme at the School of Human Medicine, Michigan State University) are unusual exceptions to the rule.

It is obviously difficult to be certain that student-oriented and role-oriented professional education does not exist in quarters untouched by our investigations. The evidence at our disposal, however, clearly suggests that such efforts are rare indeed.

Reorganisation of Basic Science Preparation for the Health Professions

The available evidence indicates that there are very few attempts to strike a proper balance between social science and natural science in education for the health professions. That there are exceptions to this situation is clear : certain health science centres (e.g. Kentucky and Stony Brook, USA, Ulm, Germany) have significant programmes in behavioural or social sciences ; other programmes involve social scientists in traditional departments (e.g. social or community medicine and psychiatry) ; Tromsö's health sciences courses draw on a wide range of disciplines from other university faculties ; in Germany, a large amount of social science instruction is now mandatory under the Approbationsordnung für Ärzte (1972). Programmes like these win well-deserved approval. The fact remains that a survey of most curricula reveals the fact that this tendency has not yet been generally implemented (Council of Europe, 1973).

Lifelong and Recurrent Education

A much more positive appraisal can be made with respect to progress in three aspects of lifelong education : recycling professional knowledge, promoting career mobility and transforming current practices. Affirmative patterns are developing in many countries. The use of professional journals and annual meetings, common to all countries, is being supplemented by the use of audio and visual tape cassettes, study groups based in local hospitals, and a growing variety of short-cycle (one- to twelve-week) courses for updating and advancement.

With this increase in available educational opportunities there is a parallel growth of organised « continuing education ». In Canada and the USA, medical societies (both general and specialised) have begun to require periodic re-education as a condition of membership, and many specialty societies are promulgating periodic « self-assessment » examinations for their membership (Carmichael, 1972). Governments are also active, as in the case of the very intensive efforts of the regional Post-Graduate Educational Programmes in the UK, legally required attendance at continuing education programmes in Germany, and government support for continuing education of general practitioners in Australia.

Programmes geared to advancement are not at the moment so well developed as recycling education, but here again significant movement seems to be under way. In Sweden, current educational sequences for nurses provide for alternating periods of learning and work, with opportunities for advancement, specialisation, and lateral mobility under the general principles of recurrent education (Tengstam, 1975). Similar « career ladder » programmes are being sponsored by large health organisations (such as Departments of Mental Health) in many OECD countries. The increasing use of new techniques for evaluating professional

experience by means of objective testing should enhance this movement ; already, such a programme in the state of New York has allowed thousands of nurses to advance to higher professional levels.

Finally, nation-wide educational programmes aimed at modifying the activity of practising professionals are beginning to appear. In the UK, a massive programme provided thousands of physicians, nurses, managers, and other personnel with opportunities to orient themselves to the new objectives and methods called for by the 1974 reorganisation of the National Health Service. Involving residential study ranging from several days to several weeks at selected university centres, this programme was designed to bring about a system-wide coordination of professional abilities and national objectives in advance of the reorganisation, and will be further extended in the future (Chester 1975).

The movement toward life-long education is of course part of a wider social movement toward recurrent education now being examined by OECD's Centre for Educational Research and Innovation (CERI). Already the needs for career mobility and adaptation to changing occupational conditions have contributed to major legislative actions such as : the French law of 16th July 1971, which guarantees paid educational leaves of absence for up to 2 per cent of the labour force; the German Employment Promotion Act of 25th June 1969, which provides training and subsidies to workers who are unemployed or are in labour market areas undergoing change (Striner, 1972).

It would be improper to suggest, however, that a review of lifelong education gives cause for complete satisfaction : much more initiative is needed. There is, for example, almost no effort directed toward periodic teacher training apart from the WHO comprehensive long-term teacher training programme (WHO Technical Report 521). In contrast to some other prescriptions for education, however, it is clear that progress toward lifelong and recurrent education is being made on a wide front, and by many countries.

SUMMARY AND CONCLUSIONS

An appraisal of education of the health professions in the light of developments in health care is only mildly encouraging. Prescriptions for innovation are abundant, but actions are generally few and small.

Positive educational responses centre on a number of basic themes :

- comprehensive national educational planning ;
- regional partnerships between educational ensembles and health care systems ;
- curricula directly relating to primary health care, at both basic professional and specialised levels, and in appropriate learning environments ;
- interprofessional educational programmes for members of health care teams ;
- educational programmes designed in the perspective of student orientation and new professional roles in primary health care ;
- a more appropriate curricular balance among natural, social and management sciences ;
- patterns of lifelong and recurrent education that enhance the more rapid introduction of new concepts and techniques of health care, while also promoting individual mobility and advancement.

Although there are many innovations along these lines, the great bulk of educational programmes continue to follow a course that is uncoordinated, hospital-based, specialty oriented, mono-disciplinary and mono-professional in nature, rigid in structure, minimally oriented to social science preparation, and

concentrated on the period of initial training to the neglect of life-long and recurrent education. This is a situation that bodes ill for the efforts of health care systems to respond to the needs of modern society.

The questions that remain are three. Why is there not a broader response to the initiatives scattered through the system ? What conditions are favourable to the growth of such responses ? What can be done by all of the partners in health care — health professionals, educators, government officials, citizens and patients — to bring about more favourable educational responses ?

A certain amount of the slow adoption of educational innovation is to be expected : no large and complicated system can be changed overnight. But, as we have indicated, there are also specific impediments to change in the education of the health professions : lack of clarity about health care policies, absence of health care/education policy coordination, fragmented educational responsibilities for different professional programmes, funding systems that bind education to hospitals, and existing faculties overwhelmingly oriented to the natural sciences and to hospital/specialised health care.

As we have viewed those educational systems and institutions that have mounted innovative and successful programmes of the sort called for by the experts, we have been struck by the fact that most of these obstacles have been eliminated or tempered by at set of measures that create a favourable climate for change :

— mechanisms for defining clear and explicit national health care policies, on the basis of which a set of health care and educational actions can properly be oriented ;
— coordination of government procedures in health care and education in such a way as to support and encourage regional conjoint action ;
— educational structures that cut across the barriers of institutional boundaries and university/non-university cleavages and that view education from the strategic perspective of life-long education ;
— participation of citizens, professionals and government officials in policy-making bodies at every level.

Certainly, these measures are difficult and time-consuming to create. But the difficulties can in fact be overcome ; in reality, models of such measures are working.

We cannot say that they are all that is needed to promote health care/education interaction, or that positive interactions have not appeared in the absence of one or more of them. They do appear, however, to create a positive constellation of forces, and we are impressed with the fact that they seem to have provided a favourable developmental atmosphere for the most fruitful health care/education partnerships we have found.

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